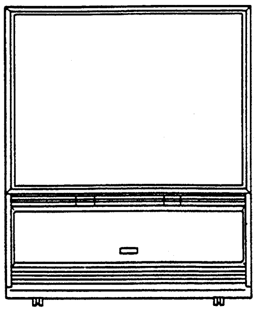
PIONEER

The Art of Entertainment

Service Manual



ORDER NO.
ARP2368

PROJECTION MONITOR RECEIVER

SD-T5000

SD-T5000 HAS THE FOLLOWING:

Type	Power requirement	Remarks
S	AC 110V , 120V-127V, 220V, 240V (switchable)	
WEB	AC220V-240V	
WEZI	AC220V-240V	

- **This manual is applicable to S type.**
- **This manual is combined with operating instructions (from page 227).**
- **As to the other types, refer to the applicable service manuals.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trate del método ajuste escrito en español.**

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This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY PRECAUTIONS

NOTICE:Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.
The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled.
   Keep picture tube away from the body while handling.
2. When service is required, even though the SD-T5000 an isolation transformer should be inserted between power line and the set in safety before any service is performed.
3. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
4. When service is required, observe the original lead dress.
   Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
5. Always use the manufacturer's replacement components.
   Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's.
   Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
6. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing.

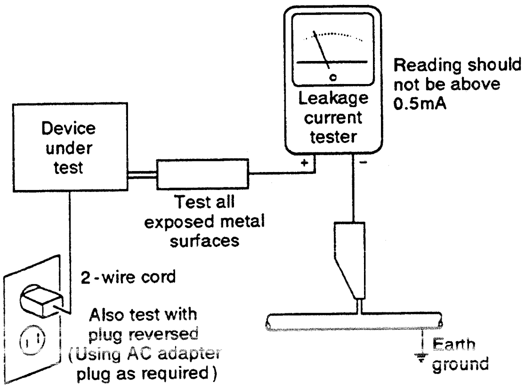
Therefore, the following checks should be performed for the continued protection of the customer and service technician.

Leakage Current Cold Check

With the AC plug removed from the 110/120-127/220/240V AC 50/60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester(DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part(input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3MΩ and a maximum resistor reading of 5MΩ . Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a 110/120 - 127/220/240V AC 50/60Hz outlet (do not use an isolation transformer for this check). Turn the AC power switch on. Using a "Leakage Current Tester(Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet(input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground(water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
+
-
Device under test
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

High Voltage

This set is provided with a X-ray protection for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this X-ray protection may correctly be operated.

Serviceman Warning

In the status of the black picture(video muting is being applied)when no signal is input, high voltage of this set during operation is less than 31.4kV. In case any component having some relation to the high voltage is replaced, confirm that the high voltage is lower than 31.4kV in the status of the black picture when no signal is input.

X-radiation

TUBE: The primary source of X-radiation in this set is the picture tube.
For continued X-radiation protection, the replacement tube must be the same type as the original, PIONEER approved type.
The picture tube(CRT assembly R, G, B)used in this set holds complete guarantee against X-ray radiation when the X-ray is sealed (See on page 5). Accordingly, when the current in flowing to the picture tube(CRT assembly R, G, B), be sure to perform it by putting the tube into X-ray sealed applied state. Avoid absolutely to flow the current to the picture tube(CRT assembly R, G, B)itself. Moreover, when the voltage of the high voltage circuit becomes abnormally a little higher, the picture tube radiates X-rays. Accordingly, when servicing the high voltage circuit be sure to replace as an assembly with the POWER SUPPLY-DEFLECTION assembly(AWV1225) in the manner in which has been adjusted to perform normal operation.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

3. CHARGED SECTION, HIGH VOLTAGE GENERATING POINT AND X-RAY PROTECTION

■ Charged section

The circuit in which the commercial AC power is used as it is without passing through the power supply transformer. If the charged section is touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. In this case, be sure to connect the set via an insulated transformer and supply the current.

■ Charged section (Power supply primary side)

1. The primary side of the POWER SUPPLY - DEFLECTION assembly
2. AC power cords
3. AC inlet
4. AC INPUT assembly
5. Voltage selector
6. Power transformer

part is the charged section.

part is the high voltage generating points other than the charged section.

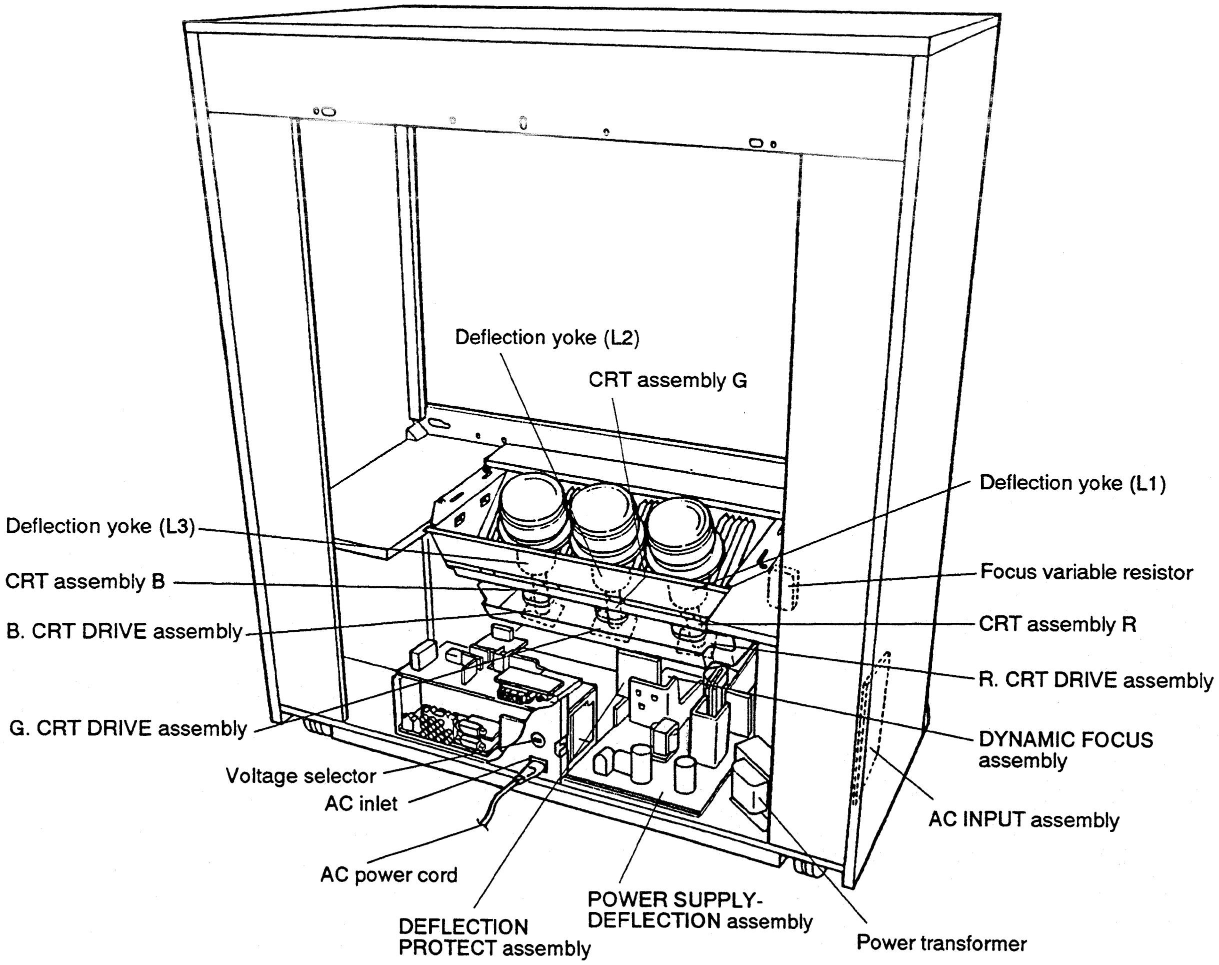

Deflection yoke (L2)
CRT assembly G
Deflection yoke (L1)
Deflection yoke (L3)
Focus variable resistor
CRT assembly B
CRT assembly R
B. CRT DRIVE assembly
R. CRT DRIVE assembly
G. CRT DRIVE assembly
DYNAMIC FOCUS assembly
Voltage selector
AC inlet
AC INPUT assembly
AC power cord
POWER SUPPLY-DEFLECTION assembly
DEFLECTION PROTECT assembly
Power transformer

Fig. 3-1 Charged section and high voltage generating point

■ High voltage generating point

The place where voltage of over 100V is generated.

1. Charged section
2. POWER SUPPLY - DEFLECTION assembly (including FBT) (31.0kV, 135V)
3. R. CRT DRIVE assembly (10.5kV)
4. G. CRT DRIVE assembly (10.5kV)
5. B. CRT DRIVE assembly (10.5kV)
6. CRT assembly R (31.0kV)
7. CRT assembly G (31.0kV)
8. CRT assembly B (31.0kV)
9. Focus variable resistor and DYNAMIC FOCUS assembly (10.5kV)
10. Deflection yokes (L1, L2, and L3) (Approx. 1100V at peak)
11. DEFLECTION PROTECT assembly (135V)

■ X-ray protection

- Regarding the parts which are relative to radiation of X-rays (There is the danger to radiate X-ray from the individual CRT assembly R, G, B), there are notifications of caution in the individual schematic diagrams. Be sure to read them for safety's sake.
- The component parts for X-ray protection are as follows :When the current flows to the CRT assembly R, G, B, be sure to perform it with these parts being attached. Protection from the X-ray radiation is maintained in the state in which these parts have been installed to the CRT assembly R, G, B. Accordingly, never supply current only to the CRT assembly R, G, B.

  Moreover, the anode voltage of the CRT assembly R, G, B should always be kept not higher than the predetermined value (in the minimum brightness and picture state when non signal input is higher than 31.4kV). Be sure to drive the CRT assembly R, G, B by using a completely functional POWER SUPPLY - DEFLECTION assembly which has been adjusted completely in the combined state. (When the voltage abnormally becomes high, the X-ray protection circuit will operate.)

1. CRT assembly R, G, B (Do not dismantle CRT assemblies under any circumstances).
2. Lens assembly 50 (R), (G), (B)

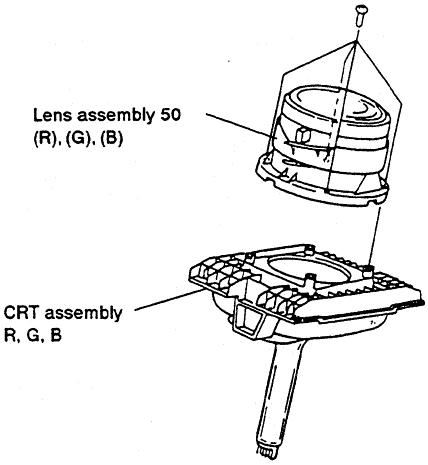


Fig. 3-2 Component parts for X-ray protection

4. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- *The Part with an encircled number are generally unavailable because they are not in Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Parts marked by ☆ are important parts which relate with X-ray radiation. If any of these parts need to be replaced, always replace with specified parts.*

4.1 PARTS LIST

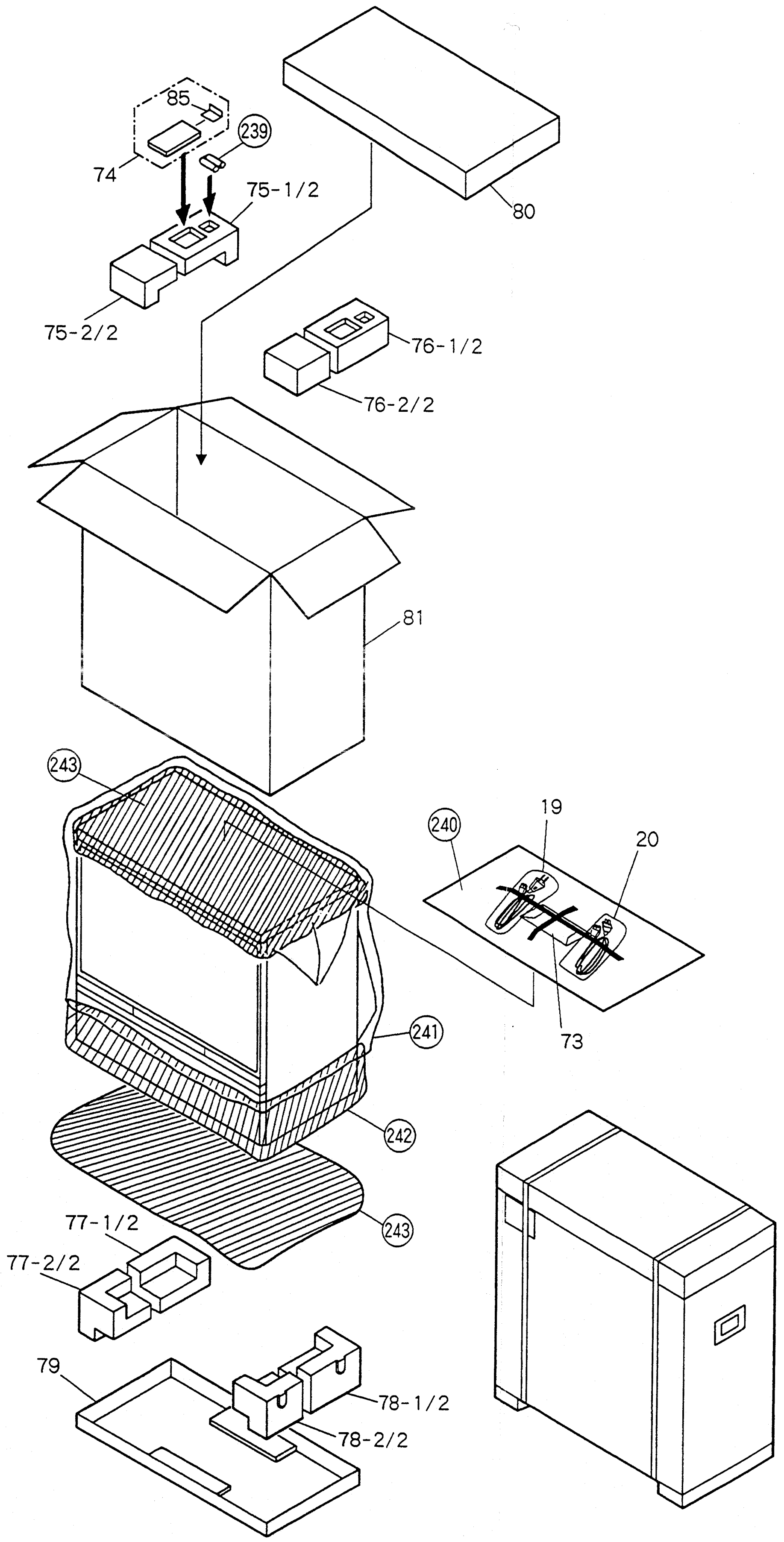
Mark	No.	Description	Part No.
⚠	1	VR1 FOCUS VR	ACX1061
⚠	2	L1 DEFLECTION YOKE	ATL1072
⚠	3	L2 DEFLECTION YOKE	ATL1073
⚠	4	L3 DEFLECTION YOKE	ATL1074
⚠	5	T1 POWER TRANSFORMER	ATS1391
⚠	6	S1 VOLTAGE SELECTOR	AKX1007
⚠	7	AC INLET	AKP1021
⚠	8	FU502 FUSE(T160mA/250V)	AEK-501
⚠	9	FU501 FUSE(T400mA/250V)	AEK-504
⚠	10	FU653 FUSE(T4A/250V)	AEK-514
⚠	11	FU654 FUSE(T4A/250V)	AEK-514
⚠	12	FU655 FUSE(T4A/250V)	AEK-514
⚠	13	FU656 FUSE(T4A/250V)	AEK-514
⚠	14	FU657 FUSE(T4A/250V)	AEK-514
⚠	15	FU651 FUSE(T6.3A/250V)	AEK-516
⚠	16	FU652 FUSE(T6.3A/250V)	AEK-516
	17	SPEAKER	APV1013
	18	SPEAKER 66	D66AP45-56L
⚠	19	AC POWER CORD	ADG1107
⚠	20	AC POWER CORD	ADG1109
	21	SHIELD COVER	ANH1166
	22	MIRROR PROTECTOR B	AAP1122
	23	PLASTIC RIVET	AEC-441
	24	SCREW GROMMET	AEC1011
	25	RUBBER CUSHION	AEC1125
	26	CORD HOLDER	AEC1257
☆	27	LENS ASSEMBLY50 (R)	AMR2163
☆	28	LENS ASSEMBLY50 (G)	AMR2164
☆	29	LENS ASSEMBLY50 (B)	AMR2165
	30	MIRROR	AMR2176
	31	FRESNEL LENS(50)	AMR2307
	32	LENTICULAR SHEET(50)	AMR2308
	33	SCREW	ABA-115
	34	SCREW WITH WASHER	ABA1005
	35	SCREW(STEEL)	ABA1067
	36	TAPPING SCREW(STEEL)	ABA1069
	37	SCREW (STEEL)	ABA1089
	38	SCREW	ABA1099
	39	SCREW(STEEL)	ABA1118
	40	SPECIAL SCREW	ABA1121
	41	M5 SCREW	ABA1122
	42	• • • • •	
	43	• • • • •	
	44	HEXAGONAL DUCT NUT	ABN-087
	45	SCREW	AMZ40P080FZK

Mark	No.	Description	Part No.
	46	SCREW	AMZ40P200FZK
	47	• • • • •	
	48	SCREW	BBZ30P060FMC
	49	SCREW	BBZ30P080FZK
	50	SCREW	BPZ30P120FZK
	51	SCREW	BYC35P120FZB
	52	SCREW	BYC35P160FZK
	53	SCREW	BYC40P160FMC
	54	SCREW	BYC40P200FMC
	55	SCREW	BYC40P250FMC
	56	SCREW	FBT40P120FZK
	57	SCREW	MTZ30P100FZK
	58	SCREW	PPZ40P120FMC
	59	SCREW	VBT30P080FZK
	60	SCREW	VCZ30P060FMC
	61	SCREW	VMZ30P060FCU
	62	SCREW	VPZ40P160FMC
	63	CONTROL SHEET	AAK2236
	64	INDICATOR PANEL	AAK2237
	65	BADGE	AAM1036
	66	DOOR	AAN1297
	67	SCREEN FRAME ASS'Y	AAP1186
	68	CONTROL PANEL	AMB1793
	69	SIDE PANEL L(50)	AMB1796
	70	SIDE PANEL R(50)	AMB1797
	71	GRILLE R50	AMR2281
	72	CATCHER	AEC1012
	73	OPERATING INSTRUCTIONS (English)	ARB1341
	74	REMOTE CONTROL UNIT	AXD1245
	75	UPPER PAD L	AHA1353
	76	UPPER PAD R	AHA1354
	77	UNDER PAD L	AHA1355
	78	UNDER PAD R	AHA1356
	79	UNDER CARTON	AHD1892
	80	UPPER CARTON	AHD2187
	81	TUBE	AHD2188
⚠☆	82	CRT ASSEMBLY(G)	AWY1130
⚠☆	83	CRT ASSEMBLY(R)	AWY1133
⚠☆	84	CRT ASSEMBLY(B)	AWY1134
	85	BATTERY COVER	AZN1970
	86	R.CRT DRIVE ASSEMBLY	AWZ3040
	87	G.CRT DRIVE ASSEMBLY	AWZ3041
	88	B.CRT DRIVE ASSEMBLY	AWZ3042
☆	89	POWER SUPPLY-DEFLECTION ASSEMBLY	AWV1225

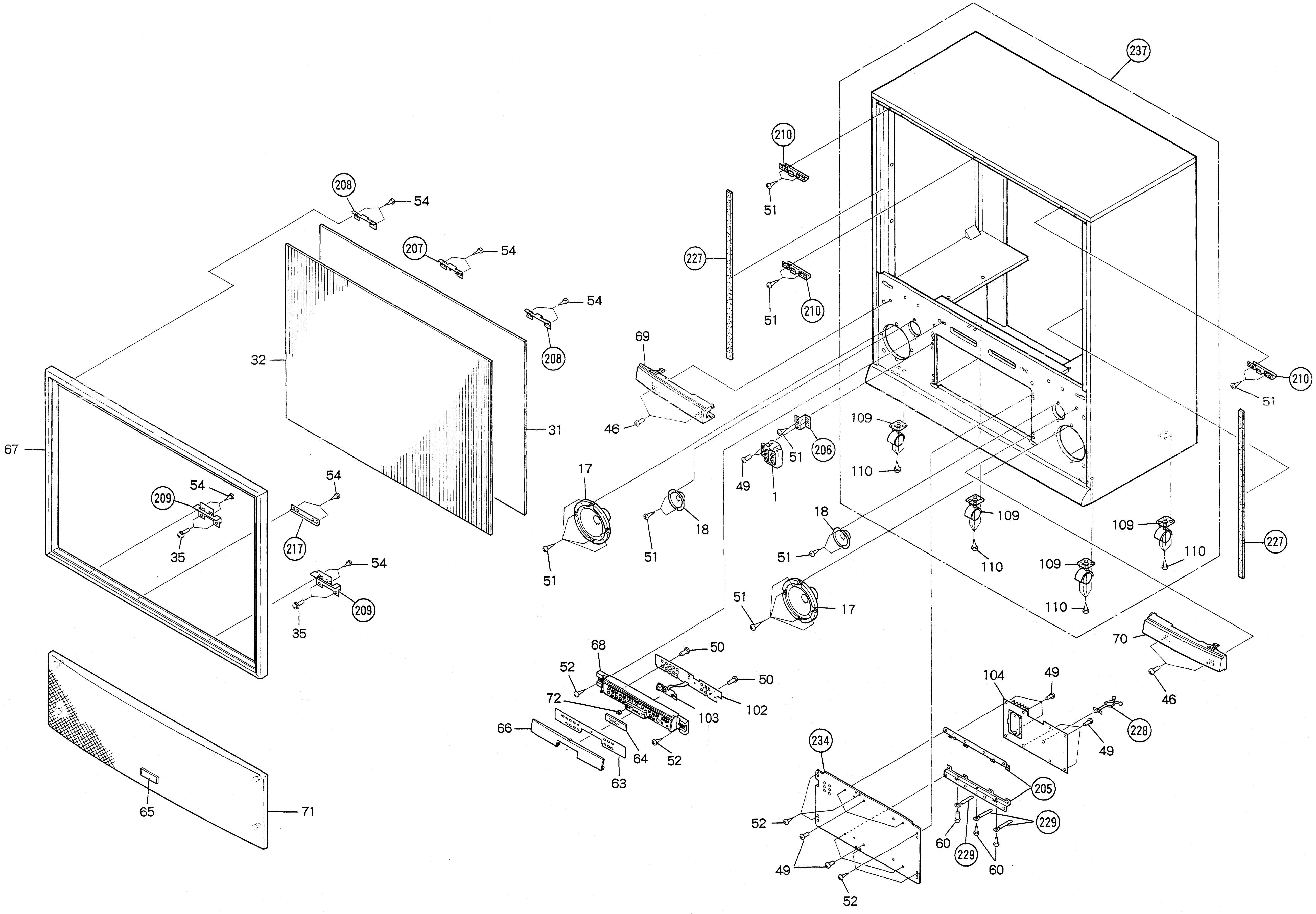
Mark	No.	Description	Part No.
	90	AC INPUT ASSEMBLY	AWZ3991
	91	DYNAMIC FOCUS ASSEMBLY	AWZ3992
	92	AM-DEMOD ASSEMBLY	AWZ3993
	93	4.5MHz B.P.F. ASSEMBLY	AWZ3994
	94	VIDEO-AUDIO ASSEMBLY	AWV1227
	95	MICROCOMPUTER ASSEMBLY	AWZ3995
	96	TUNER-NICAM ASSEMBLY	AWZ3996
	97	I/O-TEXT ASSEMBLY	AWZ3997
	98	SUB TEXT ASSEMBLY	AWZ3998
	99	Y-C SEPARATION ASSEMBLY	AWZ3999
	100	EXT. SP ASSEMBLY	AWZ4000
	101	SOUND TRAP ASSEMBLY	AWZ4001
	102	FRONT ASSEMBLY	AWZ4002
	103	DPO ASSEMBLY	AWZ4003
	104	CONVERGENCE ASSEMBLY	AWZ4004
☆	105	HIGH VOLTAGE CONTROL ASSEMBLY	AWZ4005
	106	AV1 ASSEMBLY	AWZ4006
	107	AV2 ASSEMBLY	AWZ4007
	108	DEFLECTION PROTECT ASSEMBLY	AWV1232
	109	CASTER	AMR1117
	110	SCREW(FOR CASTER)	BYC40P180FMC
	111	SCREW	BYC35P100FMC
	112	MICROCOMPUTER-SUB ASSEMBLY	AWV1245

Mark	No.	Description	Part No.
	200	CHASSIS	ANA1120
	201	CRT STAND (50)	ANA1156
	202	REAR PANEL	ANC1799
	203	COVER L	ANF1053
	204	REAR COVER	ANF1066
	205	CONVERGENCE STAY	AND1035
	206	VR HOLDER	ANG1404
	207	FRAME UPPER HOLDER A	ANG1443
	208	FRAME UPPER HOLDER B	ANG1444
	209	FRAME UNDER HOLDER	ANG1445
	210	UPPER METAL FRAME	ANG1634
	211	SIDE FRAME	ANG1448
	212	FRAME	ANG1449
	213	PCB HOLDER A	ANG1450
	214	PCB HOLDER B	ANG1451
	215	MIRROR HOLDER ASS'Y	ANG1458
	216	FOCUS HOLDER	ANG1496
	217	FRAME HOLDER	ANG1525
	218	TRAY HOLDER L	ANG1539
	219	TRAY HOLDER R	ANG1540
	220	CORD HOLDER	AEC1020
	221	CUSHION SHEET A	AEC1051
	222	CUSHION SHEET B	AEC1111
	223	PCB SUPPORT	AEC1237
	224	MIRROR CUSHION	AEC1242
	225	MIRROR CUSHION 50	AEC1243
	226	PC SUPPORT	AEC1286
	227	CUSHION	AEC1300
	228	CABLRE CLIP	AEC1325
	229	BINDER	AEP-215
	230	LEAD CLAMPER	AEP-329
	231	• • • • •	
	232	• • • • •	
	233	• • • • •	
	234	BLIND PLATE	AMM1570
	235	TRAY	AMR2246
	236	BACK COVER PANEL	AMM1572
	237	CABINET	AMM1643
	238	MIRROR CASE	AME1019
	239	DRY CELL BATTERY(R6P, AA)	AEX-010
	240	CORRUGATED PAPER SPACER	AHB1079
	241	PACKING BAG	AHG1035
	242	PACKING SHEET	AHG1041
	243	PACKING SHEET	AHG1078
	244	PAL SOCKET	AKX-202

4.2 PACKING



4.3 FRONT VIEW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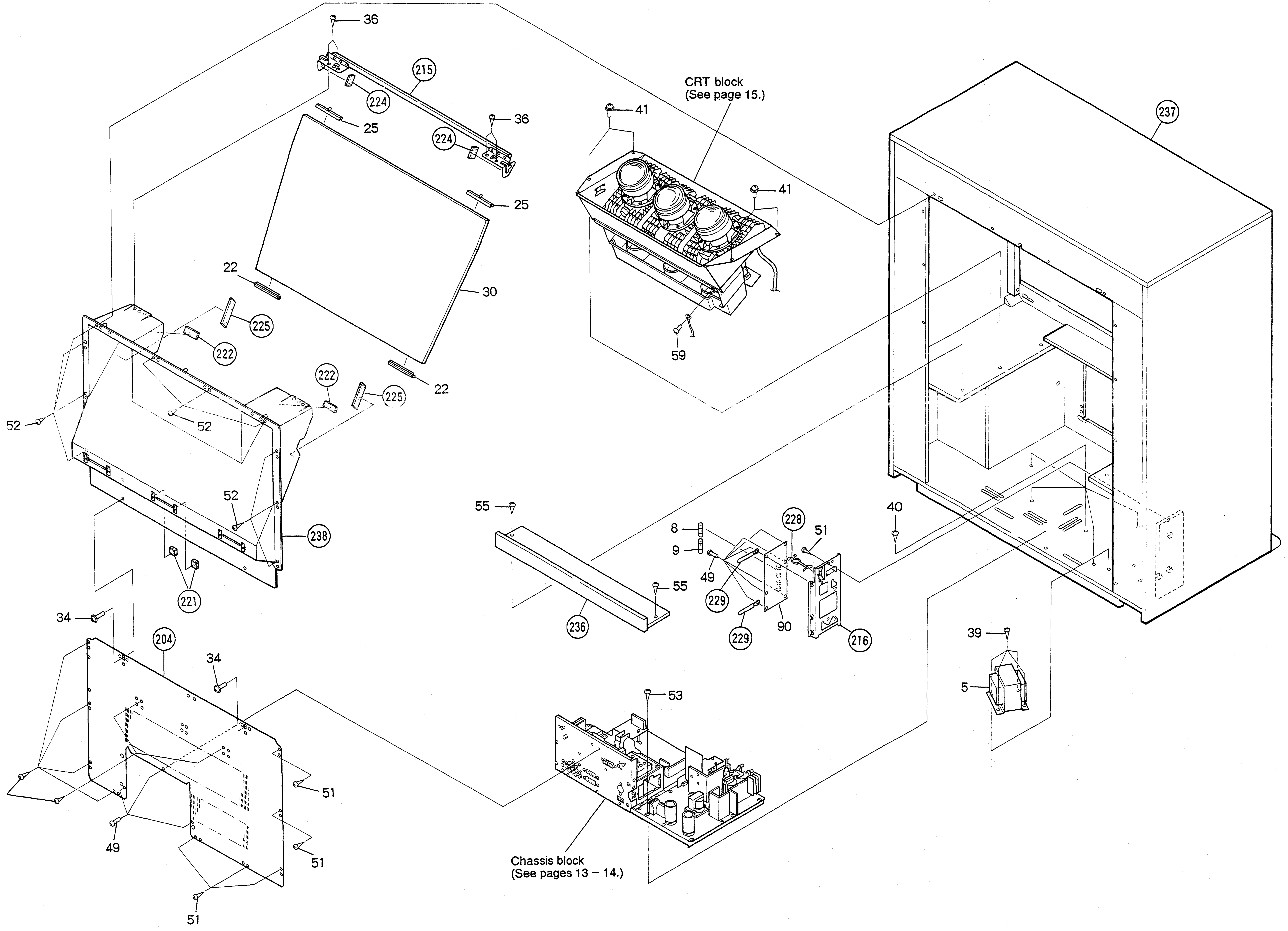
4.4 REAR VIEW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CRT block
(See page 15.)
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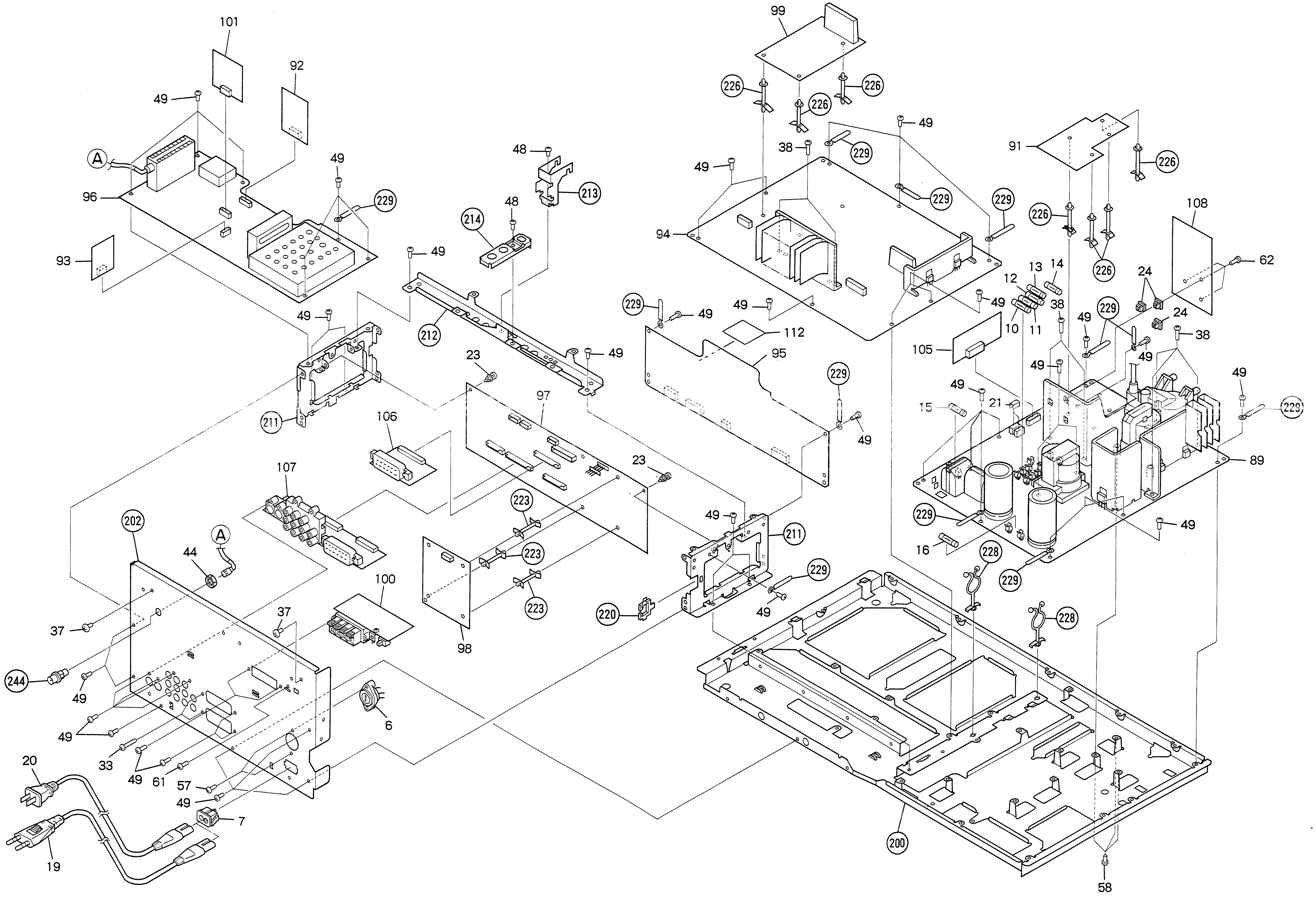
Chassis block
(See pages 13 – 14.)

4.5 CHASSIS BLOCK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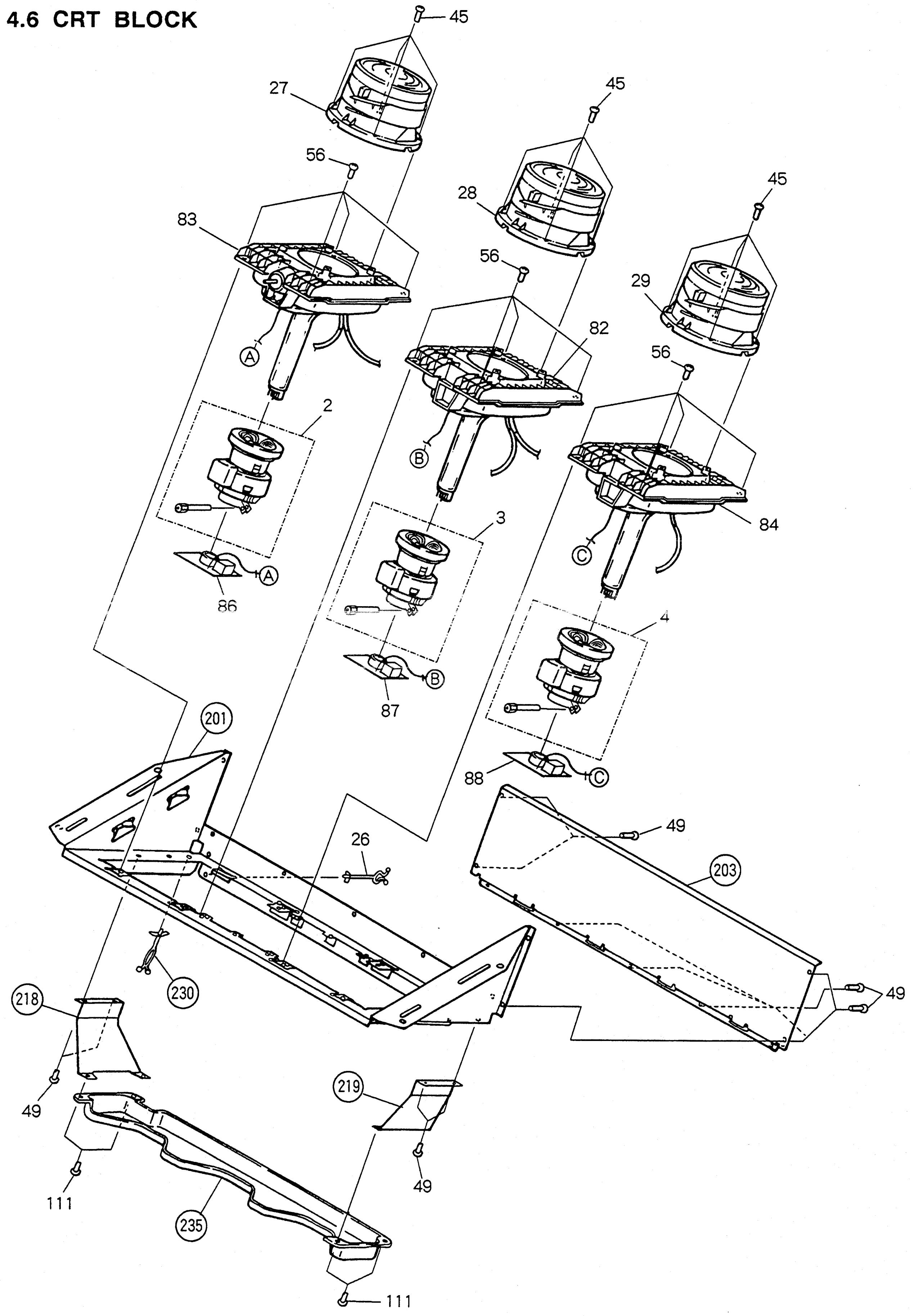
4.6 CRT BLOCK



5. SCHEMATIC AND P.C. BOARDS CONNECTION DIAGRAM

1. RESISTORS:
Indicated in Ω , 1/4W, 1/6W and 1/8W, ± 5% tolerance unless otherwise noted k;k Ω , M;M Ω , (F); ± 1%, (G); ± 2%, (K); ± 10%, (M); ± 20% tolerance.

2. CAPACITORS:
Indicated in capacity(μ F)/voltage(V)unless otherwise noted p;pF.
Indication without voltage is 50V except electrolytic capacitor.

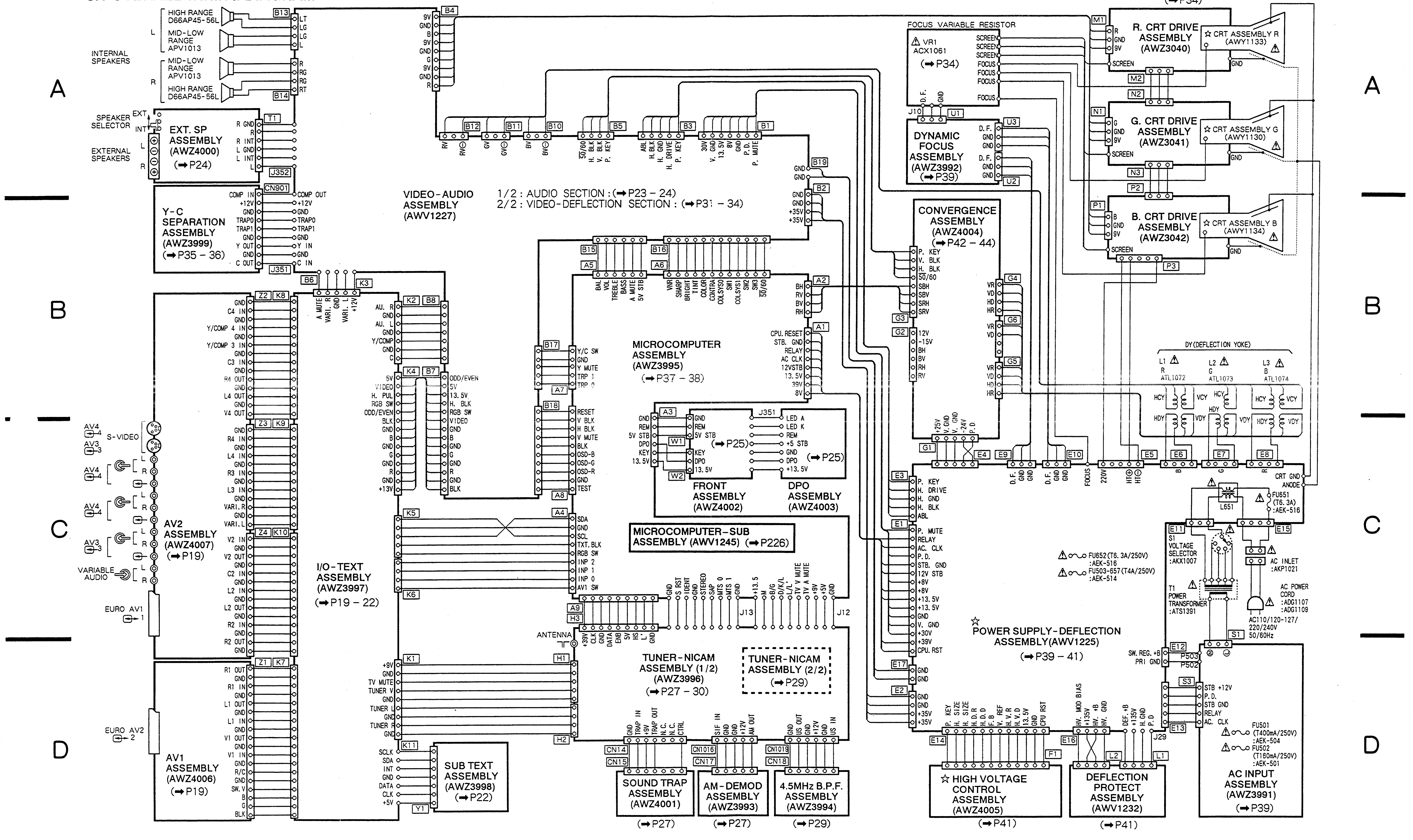
3. VOLTAGE, CURRENT:
[V] ; Signal voltage at 10W+10W, 8Ω output (1kHz)
▭ ; DC voltage(V)at no input signal without notice.
Value in( )is color bar signal input state.
⇦mA ;DC current at no input signal without notice.

4. OTHERS:
➡;Signal route.
⊘;Adjusting point.

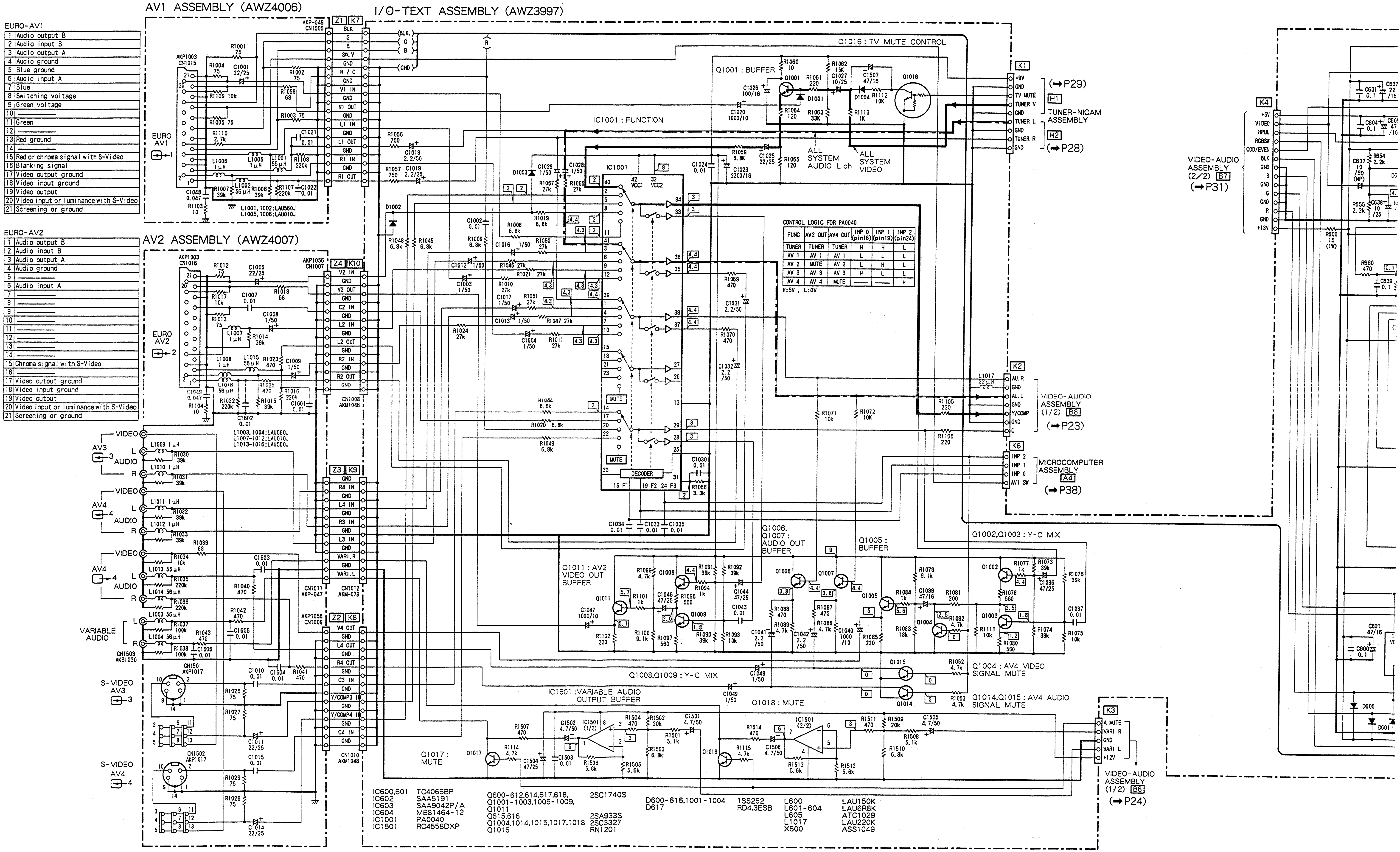
- ▼ (Red) ; Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- ※ marked capacitors and resistors have parts numbers.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
- Parts marked by ☆ are important parts which relate with X-ray radiation. If any of these parts need to be replaced, always replace with specified parts.
- Parts marked by × are important parts which relate with X-ray radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself.
If any part marked by × is replaced, there is danger of being exposed to X-rays.
- Waveform ; Color bar input state.

5. SWITCHES:(The underlined indicates the switch position)
EXT. SP ASSEMBLY
S251:SPEAKER SELECTOR INT – EXT
FRONT ASSEMBLY
S851:POWER
S852:PRESET MENU ON/OFF
S853:FINE TUNE
S854:TV SYSTEM
S855:SET
S856:SELECT/ADJ + ⎤ PRESET MENU
S857:SELECT/ADJ – ⎦
S858:FACTORY ADJ
S859:DPO
S860: -••- /AV MEM
S861: ⊿ +
S862: ⊿ –
S863:CH-PR +
S864:CH-PR –
S865:CH/PR
S866: ⇨ (INPUT SELECTOR)

5.1 OVERALL WIRING DIAGRAM


INTERNAL SPEAKERS
HIGH RANGE D66AP45-56L
MID-LOW RANGE APV1013
SPEAKER SELECTOR
EXTERNAL SPEAKERS
EXT. SP ASSEMBLY (AWZ4000) (➡P24)
Y-C SEPARATION ASSEMBLY (AWZ3999) (➡P35 – 36)
VIDEO-AUDIO ASSEMBLY (AWV1227)
1/2 : AUDIO SECTION : (➡P23 – 24)
2/2 : VIDEO-DEFLECTION SECTION : (➡P31 – 34)
FOCUS VARIABLE RESISTOR
VR1 ACX1061 (➡P34)
DYNAMIC FOCUS ASSEMBLY (AWZ3992) (➡P39)
R. G. B. CRT DRIVE ASSEMBLIES (➡P34)
R. CRT DRIVE ASSEMBLY (AWZ3040)
CRT ASSEMBLY R (AWY1133)
G. CRT DRIVE ASSEMBLY (AWZ3041)
CRT ASSEMBLY G (AWY1130)
B. CRT DRIVE ASSEMBLY (AWZ3042)
CRT ASSEMBLY B (AWY1134)
CONVERGENCE ASSEMBLY (AWZ4004) (➡P42 – 44)
DY (DEFLECTION YOKE)
L1 R ATL1072
L2 G ATL1073
L3 B ATL1074
MICROCOMPUTER ASSEMBLY (AWZ3995) (➡P37 – 38)
FRONT ASSEMBLY (AWZ4002) (➡P25)
DPO ASSEMBLY (AWZ4003) (➡P25)
MICROCOMPUTER-SUB ASSEMBLY (AWV1245) (➡P226)
AV2 ASSEMBLY (AWZ4007) (➡P19)
AV1 ASSEMBLY (AWZ4006) (➡P19)
I/O-TEXT ASSEMBLY (AWZ3997) (➡P19 – 22)
SUB TEXT ASSEMBLY (AWZ3998) (➡P22)
S-VIDEO
AV4
AV3
VARIABLE AUDIO
EURO AV1
EURO AV2
ANTENNA
TUNER-NICAM ASSEMBLY (1/2) (AWZ3996) (➡P27 – 30)
TUNER-NICAM ASSEMBLY (2/2) (➡P29)
SOUND TRAP ASSEMBLY (AWZ4001) (➡P27)
AM-DEMOD ASSEMBLY (AWZ3993) (➡P27)
4.5MHz B.P.F. ASSEMBLY (AWZ3994) (➡P29)
POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225) (➡P39 – 41)
HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005) (➡P41)
DEFLECTION PROTECT ASSEMBLY (AWV1232) (➡P41)
AC INPUT ASSEMBLY (AWZ3991) (➡P39)
FU652 (T6. 3A/250V) :AEK-516
FU503-657 (T4A/250V) :AEK-514
FU651 (T6. 3A) :AEK-516
S1 VOLTAGE SELECTOR :AKX1007
T1 POWER TRANSFORMER :ATS1391
AC INLET :AKP1021
AC POWER CORD :ADG1107 :ADG1109
AC110/120-127/220/240V 50/60Hz
FU501 (T400mA/250V) :AEK-504
FU502 (T160mA/250V) :AEK-501
L651

5.2 I/O-TEXT, AV 1, AV 2 AND SUB TEXT ASSEMBLIES


AV1 ASSEMBLY (AWZ4006)
I/O-TEXT ASSEMBLY (AWZ3997)
AV2 ASSEMBLY (AWZ4007)
A
B
C
D
EURO AV1
EURO AV2
AKP1003 CN1015
AKP1003 CN1016
AKP-049 CN1005
AKP1056 CN1007
Z1 K7
Z4 K10
Z3 K9
Z2 K8
CN1008 AKM1048
CN1011 AKP-047
CN1012 AKM-079
AKP1056 CN1009
CN1010 AKM1048
BLK
G
B
SW. V
GND
R / C
V1 IN
V1 OUT
L1 IN
L1 OUT
R1 IN
R1 OUT
V2 IN
V2 OUT
C2 IN
L2 IN
L2 OUT
R2 IN
R2 OUT
R4 IN
L4 IN
R3 IN
L3 IN
VARI. R
VARI. L
V4 OUT
L4 OUT
R4 OUT
C3 IN
Y/COMP3 IN
Y/COMP4 IN
C4 IN
L1001, 1002:LAU560J
L1005, 1006:LAU010J
L1003, 1004:LAU560J
L1007-1012:LAU010J
L1013-1016:LAU560J
AV3
AV4
VIDEO
L
AUDIO
R
VARIABLE AUDIO
CN1503 AKB1030
S-VIDEO AV3
S-VIDEO AV4
CN1501 AKP1017
CN1502 AKP1017
Q1016 : TV MUTE CONTROL
Q1001 : BUFFER
IC1001 : FUNCTION
IC1001
VCC1
VCC2
MUTE
DECODER
16 F1
19 F2
24 F3
ALL SYSTEM AUDIO L ch
ALL SYSTEM VIDEO
K1
+9V
GND
TV MUTE
TUNER V
TUNER L
TUNER R
(➡P29)
H1
TUNER-NICAM ASSEMBLY
H2
(➡P28)
K2
AU. R
AU. L
Y/COMP
C
VIDEO-AUDIO ASSEMBLY (1/2) B8
(➡P23)
K6
INP 2
INP 1
INP 0
AV1 SW
MICROCOMPUTER ASSEMBLY A4
(➡P38)
K4
+5V
VIDEO
HPUL
RGBSW
ODD/EVEN
BLK
+13V
VIDEO-AUDIO ASSEMBLY (2/2) B7
(➡P31)
Q1002,Q1003 : Y-C MIX
Q1006, Q1007 : AUDIO OUT BUFFER
Q1005 : BUFFER
Q1011 : AV2 VIDEO OUT BUFFER
Q1008,Q1009 : Y-C MIX
Q1004 : AV4 VIDEO SIGNAL MUTE
Q1014,Q1015 : AV4 AUDIO SIGNAL MUTE
Q1018 : MUTE
IC1501 :VARIABLE AUDIO OUTPUT BUFFER
Q1017 : MUTE
K3
A MUTE
VARI R
VARI L
+12V
VIDEO-AUDIO ASSEMBLY (1/2) B6
(➡P24)
D600
D601

EURO-AV1

1	Audio output B
2	Audio input B
3	Audio output A
4	Audio ground
5	Blue ground
6	Audio input A
7	Blue
8	Switching voltage
9	Green voltage
10	——
11	Green
12	——
13	Red ground
14	——
15	Red or chroma signal with S-Video
16	Blanking signal
17	Video output ground
18	Video input ground
19	Video output
20	Video input or luminance with S-Video
21	Screening or ground

EURO-AV2

1	Audio output B
2	Audio input B
3	Audio output A
4	Audio ground
5	——
6	Audio input A
7	——
8	——
9	——
10	——
11	——
12	——
13	——
14	——
15	Chroma signal with S-Video
16	——
17	Video output ground
18	Video input ground
19	Video output
20	Video input or luminance with S-Video
21	Screening or ground

CONTROL LOGIC FOR PA0040

FUNC	AV2 OUT	AV4 OUT	INP 0 (pin16)	INP 1 (pin19)	INP 2 (pin24)
TUNER	TUNER	TUNER	H	H	L
AV 1	AV 1	AV 1	L	L	L
AV 2	MUTE	AV 2	L	H	L
AV 3	AV 3	AV 3	H	L	L
AV 4	AV 4	MUTE	——	——	H

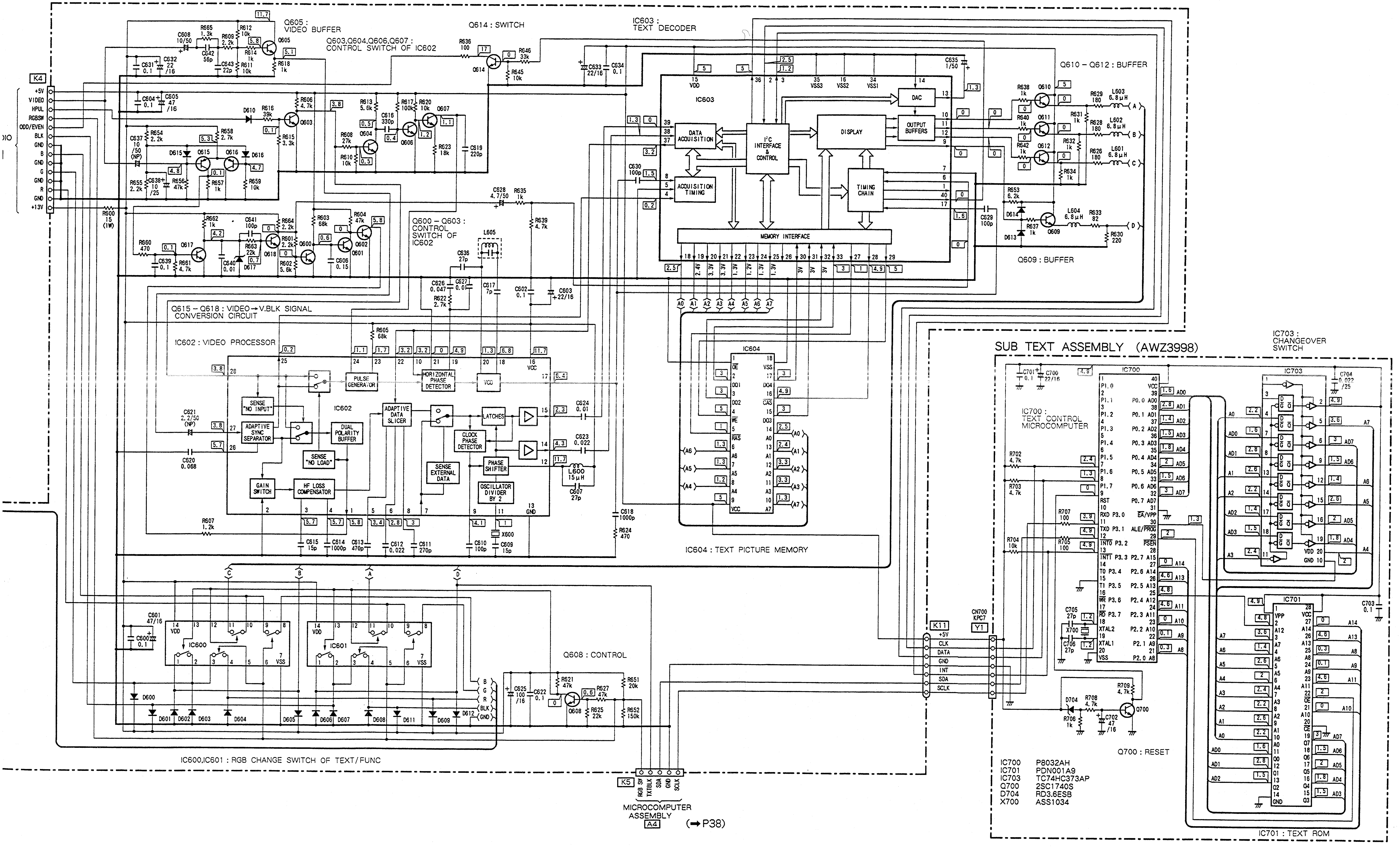
H:5V , L:0V

IC600,601	TC4066BP
IC602	SAA5191
IC603	SAA9042P/A
IC604	MB81464-12
IC1001	PA0040
IC1501	RC4558DXP

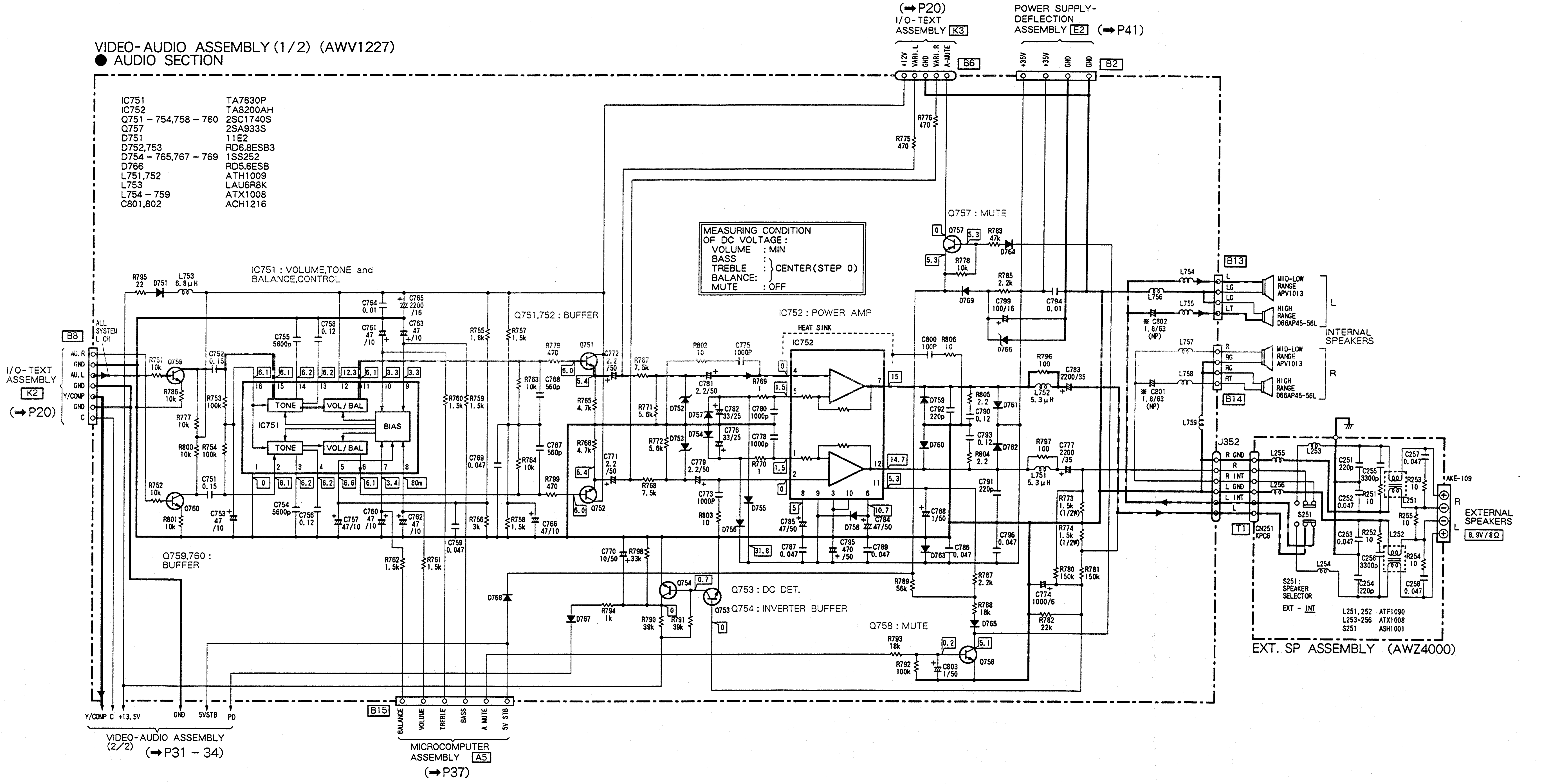
Q600-612,614,617,618, Q1001-1003,1005-1009, Q1011	2SC1740S
Q615,616	2SA933S
Q1004,1014,1015,1017,1018	2SC3327
Q1016	RN1201

D600-616,1001-1004	1SS252
D617	RD4.3ESB

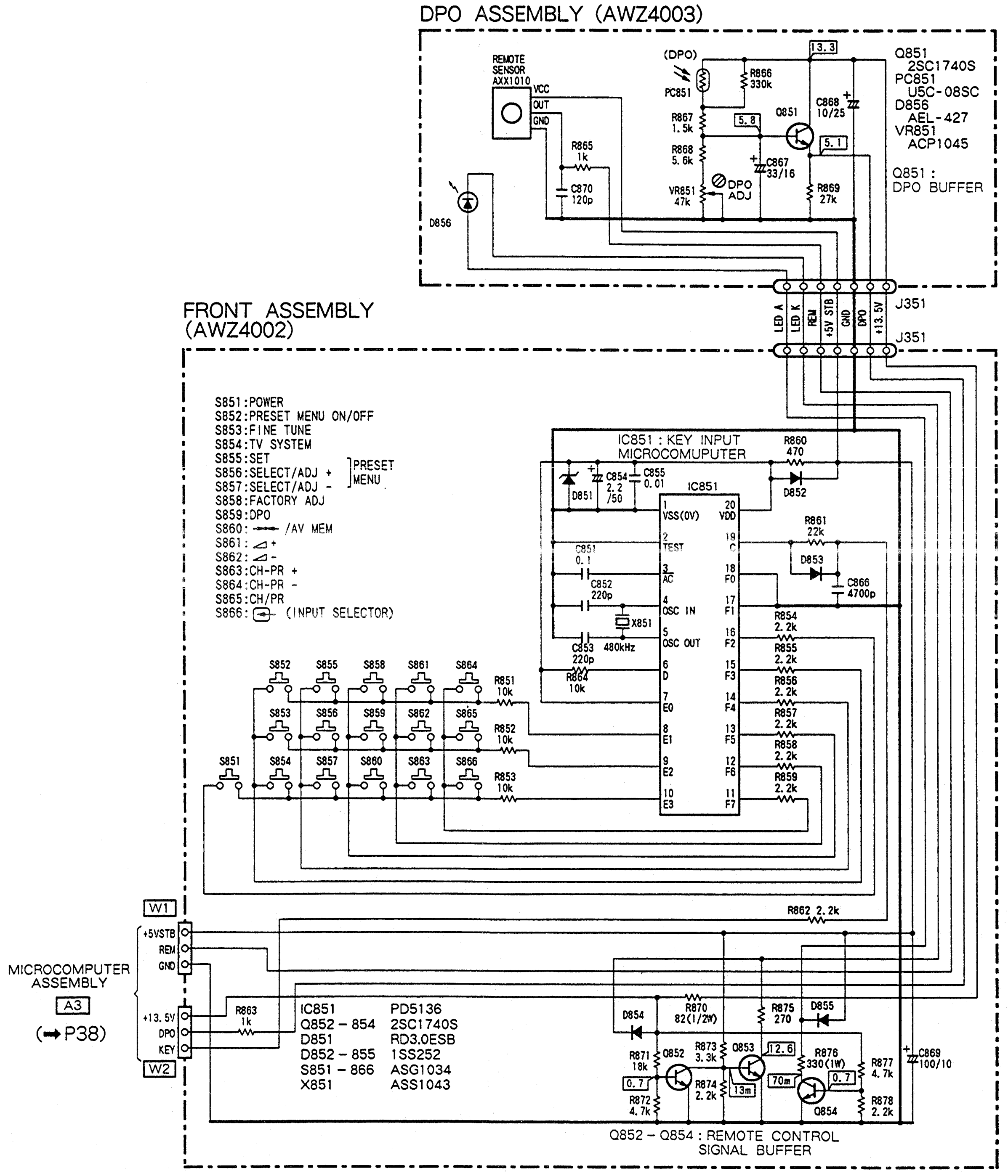
L600	LAU150K
L601-604	LAU6R8K
L605	ATC1029
L1017	LAU220K
X600	ASS1049


A
B
C
D
K4
+5V
VIDEO
HPUL
RGBSW
ODD/EVEN
BLK
GND
B
GND
G
GND
R
GND
+13V
Q605 : VIDEO BUFFER
Q603,Q604,Q606,Q607 : CONTROL SWITCH OF IC602
Q614 : SWITCH
IC603 : TEXT DECODER
IC603
DATA ACQUISITION
ACQUISITION TIMING
I²C INTERFACE & CONTROL
DISPLAY
DAC
OUTPUT BUFFERS
TIMING CHAIN
MEMORY INTERFACE
Q610 – Q612 : BUFFER
Q609 : BUFFER
Q600 – Q603 : CONTROL SWITCH OF IC602
L605
Q615 – Q618 : VIDEO→V.BLK SIGNAL CONVERSION CIRCUIT
IC602 : VIDEO PROCESSOR
IC602
SENSE "NO INPUT"
ADAPTIVE SYNC SEPARATOR
DUAL POLARITY BUFFER
SENSE "NO LOAD"
GAIN SWITCH
HF LOSS COMPENSATOR
PULSE GENERATOR
HORIZONTAL PHASE DETECTOR
VCC
ADAPTIVE DATA SLICER
LATCHES
CLOCK PHASE DETECTOR
SENSE EXTERNAL DATA
PHASE SHIFTER
OSCILLATOR DIVIDER BY 2
X600
IC604
IC604 : TEXT PICTURE MEMORY
IC600
IC601
Q608 : CONTROL
IC600,IC601 : RGB CHANGE SWITCH OF TEXT/FUNC
K5
RGB SW
TXTBLK
SDA
GND
SCLK
MICROCOMPUTER ASSEMBLY
A4
(➡P38)
K11
CN700 KPC7
Y1
+5V
CLK
DATA
GND
INT
SDA
SCLK
SUB TEXT ASSEMBLY (AWZ3998)
IC703 : CHANGEOVER SWITCH
IC700
IC700 : TEXT CONTROL MICROCOMPUTER
IC703
IC701
X700
Q700 : RESET
IC701 : TEXT ROM
IC700 P8032AH
IC701 PDN001A9
IC703 TC74HC373AP
Q700 2SC1740S
D704 RD3.6ESB
X700 ASS1034

5.3 VIDEO-AUDIO ASSEMBLY (1/2 : AUDIO SECTION) AND EXT. SP ASSEMBLY


VIDEO-AUDIO ASSEMBLY (1/2) (AWV1227)
● AUDIO SECTION
IC751 TA7630P
IC752 TA8200AH
Q751 – 754,758 – 760 2SC1740S
Q757 2SA933S
D751 11E2
D752,753 RD6.8ESB3
D754 – 765,767 – 769 1SS252
D766 RD5.6ESB
L751,752 ATH1009
L753 LAU6R8K
L754 – 759 ATX1008
C801,802 ACH1216
(➡P20)
I/O-TEXT ASSEMBLY K3
+12V
VARI.L
GND
VARI.R
A-MUTE
B6
POWER SUPPLY-DEFLECTION ASSEMBLY E2 (➡P41)
+35V
+35V
GND
GND
B2
MEASURING CONDITION OF DC VOLTAGE :
VOLUME : MIN
BASS : CENTER (STEP 0)
TREBLE : CENTER (STEP 0)
BALANCE : CENTER (STEP 0)
MUTE : OFF
IC751 : VOLUME,TONE and BALANCE,CONTROL
Q751,752 : BUFFER
IC752 : POWER AMP
HEAT SINK
Q757 : MUTE
Q759,760 : BUFFER
Q753 : DC DET.
Q754 : INVERTER BUFFER
Q758 : MUTE
TONE
VOL/BAL
BIAS
I/O-TEXT ASSEMBLY K2 (➡P20)
B8
AU.R
GND
AU.L
GND
Y/COMP
GND
C
ALL SYSTEM L CH
B13
B14
L
LG
LG
LT
R
RG
RG
RT
MID-LOW RANGE APV1013
HIGH RANGE D66AP45-56L
INTERNAL SPEAKERS
J352
R GND
R
R INT
L GND
L INT
L
T1
CN251 KPC6
S251
S251: SPEAKER SELECTOR
EXT - INT
L251,252 ATF1090
L253-256 ATX1008
S251 ASH1001
AKE-109
EXTERNAL SPEAKERS
8.9V/8Ω
EXT. SP ASSEMBLY (AWZ4000)
Y/COMP C +13.5V GND 5VSTB PD
VIDEO-AUDIO ASSEMBLY (2/2) (➡P31 – 34)
B15
BALANCE
VOLUME
TREBLE
BASS
A MUTE
5V STB
MICROCOMPUTER ASSEMBLY A5
(➡P37)

5.4 DPO AND FRONT ASSEMBLIES


DPO ASSEMBLY (AWZ4003)
REMOTE SENSOR AXX1010
VCC
OUT
GND
D856
R865 1k
C870 120p
(DPO)
PC851
R866 330k
R867 1.5k
R868 5.6k
VR851 47k
DPO ADJ
Q851
C867 33/16
C868 10/25
R869 27k
13.3
5.8
5.1
Q851 2SC1740S
PC851 U5C-08SC
D856 AEL-427
VR851 ACP1045
Q851 : DPO BUFFER
J351
LED A
LED K
REM
+5V STB
GND
DPO
+13.5V
FRONT ASSEMBLY (AWZ4002)
S851:POWER
S852:PRESET MENU ON/OFF
S853:FINE TUNE
S854:TV SYSTEM
S855:SET
S856:SELECT/ADJ +
S857:SELECT/ADJ -
PRESET MENU
S858:FACTORY ADJ
S859:DPO
S860: /AV MEM
S861: +
S862: -
S863:CH-PR +
S864:CH-PR -
S865:CH/PR
S866: (INPUT SELECTOR)
IC851 : KEY INPUT MICROCOMPUTER
IC851
D851
C854 2.2/50
C855 0.01
R860 470
D852
R861 22k
D853
C866 4700p
C851 0.1
C852 220p
C853 220p
X851
480kHz
R864 10k
R854 2.2k
R855 2.2k
R856 2.2k
R857 2.2k
R858 2.2k
R859 2.2k
R851 10k
R852 10k
R853 10k
MICROCOMPUTER ASSEMBLY
A3
(→P38)
W1
W2
+5VSTB
REM
GND
+13.5V
DPO
KEY
R862 2.2k
R863 1k
IC851 PD5136
Q852 - 854 2SC1740S
D851 RD3.0ESB
D852 - 855 1SS252
S851 - 866 ASG1034
X851 ASS1043
D854
R870 82(1/2W)
R875 270
D855
R871 18k
Q852
R873 3.3k
Q853
12.6
R876 330(1W)
R877 4.7k
C869 100/10
0.7
R872 4.7k
R874 2.2k
13m
70m
0.7
Q854
R878 2.2k
Q852 - Q854 : REMOTE CONTROL SIGNAL BUFFER

5.5 TUNER-NICAM, AM-DEMOD, SOUND TRAP AND 4.5MHz B.P.F. ASSEMBLIES

● Waveforms and voltages

(1) Voltage Indication

- ● V :DC voltage (V) at no input signal without notice.
- ● Meaning of the marked (input signals are described in the below.)

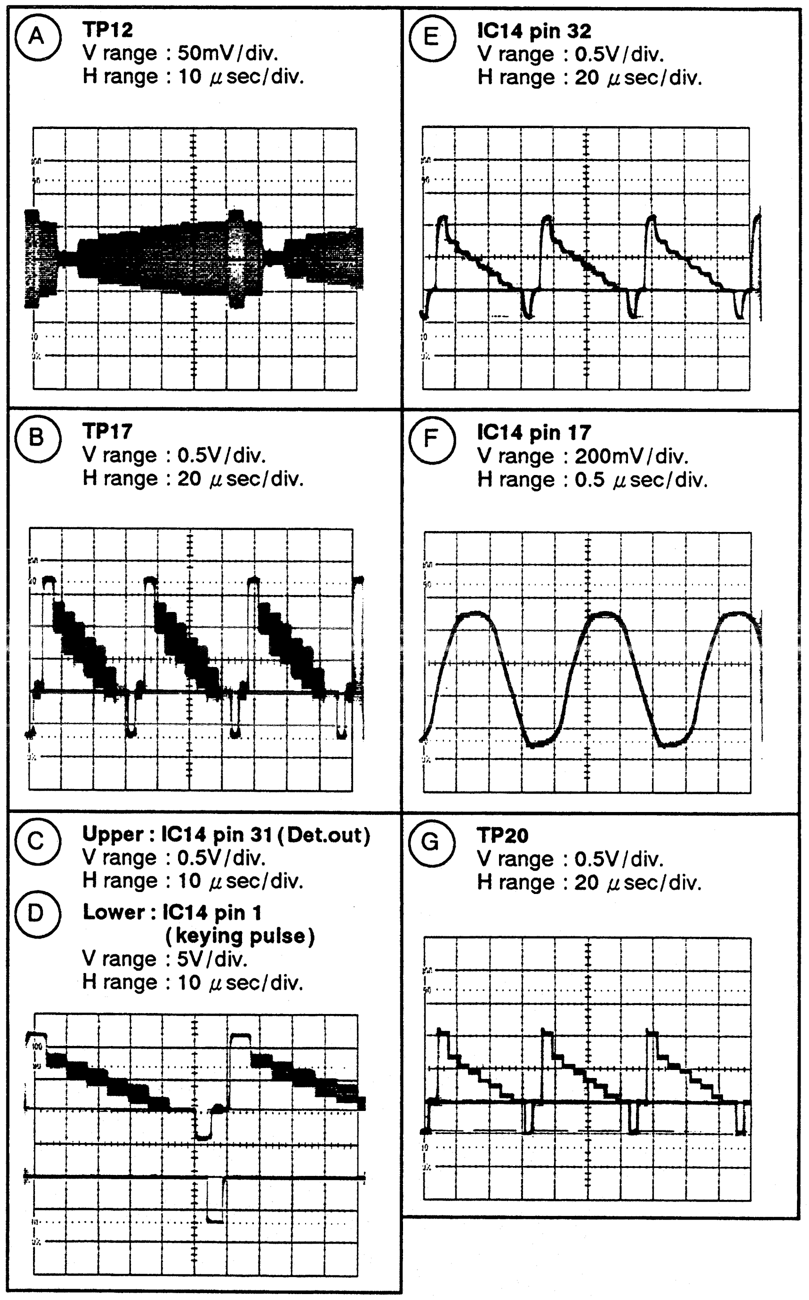
M : For input a signal of the system M.
B/G : For input a signal of the system B/G.
I : For input a signal of the system I.
D/K : For input a signal of the system D/K.
L/L' : For input a signal of the system L/L'.

● Input Signal Contents

System M	: US 9ch (fp=187.25MHz), NTSC color bar Audio : 1kHz, 25kHz DEV. RF intensity : 80dB µV
System B/G	: CCIR 7ch (fp=189.25MHz), PAL color bar (EBU) Audio : 1kHz, 30kHz DEV. RF intensity : 80dB µV
System I	: CCIR 7ch (fp=189.25MHz), PAL color bar (EBU) Audio : 1kHz, 30kHz DEV. RF intensity : 80dB µV
System D/K	: CCIR 7ch (fp=189.25MHz), SECAM color bar Audio : 1kHz, 30kHz DEV. RF intensity : 80dB µV
System L	: French F 1ch (fp=176MHz), SECAM color bar Audio : 1kHz, 70% MOD. RF intensity : 80dB µV
System L'	: French FC1 ch (fp=60.5MHz), SECAM color bar Audio : 1kHz, 70% MOD. RF intensity : 80dB µV

(2) Waveforms

Input signal : System B/G, PAL color bar (EBU), fp=189.25MHz, 80dB µV
(Only Ⓐ is no audio carrier.)



Ⓐ **TP12**
V range : 50mV/div.
H range : 10 µsec/div.

Ⓔ **IC14 pin 32**
V range : 0.5V/div.
H range : 20 µsec/div.

Ⓑ **TP17**
V range : 0.5V/div.
H range : 20 µsec/div.

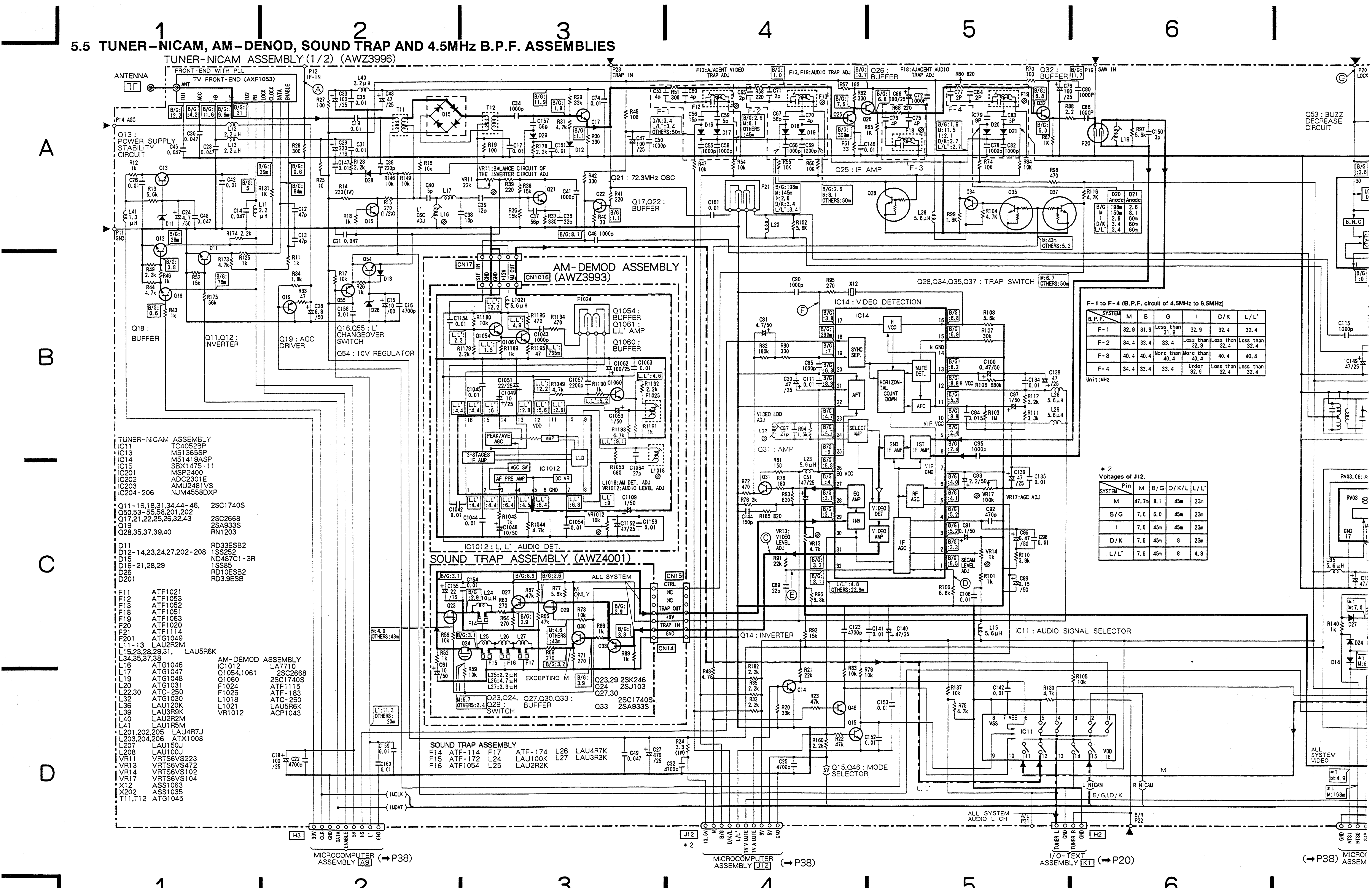
Ⓕ **IC14 pin 17**
V range : 200mV/div.
H range : 0.5 µsec/div.

Ⓒ **Upper : IC14 pin 31 (Det.out)**
V range : 0.5V/div.
H range : 10 µsec/div.

Ⓓ **Lower : IC14 pin 1 (keying pulse)**
V range : 5V/div.
H range : 10 µsec/div.

Ⓖ **TP20**
V range : 0.5V/div.
H range : 20 µsec/div.

5.5 TUNER-NICAM, AM-DENOD, SOUND TRAP AND 4.5MHz B.P.F. ASSEMBLIES


1
2
3
4
5
6
A
B
C
D
TUNER-NICAM ASSEMBLY (1/2) (AWZ3996)
ANTENNA
FRONT-END WITH PLL
TV FRONT-END (AXF1053)
P12 IF-IN
P14 AGC
P11 GND
Q13 : POWER SUPPLY STABILITY CIRCUIT
Q18 : BUFFER
Q11,Q12 : INVERTER
Q19 : AGC DRIVER
Q16,Q55 : L' CHANGEOVER SWITCH
Q54 : 10V REGULATOR
VR11 : BALANCE CIRCUIT OF THE INVERTER CIRCUIT ADJ
Q21 : 72.3MHz OSC
Q17,Q22 : BUFFER
P23 TRAP IN
F12 : AJACENT VIDEO TRAP ADJ
F13, F19 : AUDIO TRAP ADJ
Q26 : BUFFER
F18 : AJACENT AUDIO TRAP ADJ
Q32 : BUFFER
P19 SAW IN
P20 LOCK
Q25 : IF AMP
Q53 : BUZZ DECREASE CIRCUIT
Q28,Q34,Q35,Q37 : TRAP SWITCH
AM-DEMOD ASSEMBLY (AWZ3993)
CN17
CN1016
Q1054 : BUFFER
Q1061 : L.L' AMP
Q1060 : BUFFER
IC1012
L1018 : AM DET. ADJ
VR1012 : AUDIO LEVEL ADJ
IC1012 : L, L' AUDIO DET.
SOUND TRAP ASSEMBLY (AWZ4001)
ALL SYSTEM
M ONLY
EXCEPTING M
CN15
CN14
CTRL
NC
TRAP OUT
+9V
TRAP IN
GND
Q23,Q24, Q29 : SWITCH
Q27,Q30,Q33 : BUFFER
IC14 : VIDEO DETECTION
IC14
SYNC SEP.
H VCO
HORIZONTAL COUNT DOWN
MUTE DET.
AFC
AFT
SELECT AMP
2ND IF AMP
1ST IF AMP
EQ AMP
INV
VIDEO DET
VIDEO AMP
IF AGC
RF AGC
VIDEO LDD ADJ
Q31 : AMP
VR13 : VIDEO LEVEL ADJ
VR17 : AGC ADJ
SECAM LEVEL ADJ
Q14 : INVERTER
IC11 : AUDIO SIGNAL SELECTOR
IC11
Q15,Q46 : MODE SELECTOR
ALL SYSTEM VIDEO
ALL SYSTEM AUDIO L CH
P21
B/R P22
L NICAM
R NICAM
B/G.I.D/K
H3
39V
CLK
GND
DATA
ENABLE
5V
HS
L'
GND
MICROCOMPUTER ASSEMBLY A9 (➡P38)
J12
*2
13.5V
M
B/G
D/K/L
L/L'
TV V MUTE
TV A MUTE
5V
9V
GND
MICROCOMPUTER ASSEMBLY J12 (➡P38)
H2
TUNER L
GND
TUNER R
GND
I/O-TEXT ASSEMBLY K1 (➡P20)
(➡P38)

TUNER-NICAM ASSEMBLY

IC11	TC4052BP
IC13	M51365SP
IC14	M51419ASP
IC15	SBX1475-11
IC201	MSP2400
IC202	ADC2301E
IC203	AMU2481VS
IC204-206	NJM4558DXP
Q11-16,18,31,34,44-46, Q50,53-55,58,201,202	2SC1740S
Q17,21,22,25,26,32,43	2SC2668
Q19	2SA933S
Q28,35,37,39,40	RN1203
D11	RD33ESB2
D12-14,23,24,27,202-208	1SS252
D15	ND487C1-3R
D16-21,28,29	1SS85
D26	RD10ESB2
D201	RD3.9ESB
F11	ATF1021
F12	ATF1053
F13	ATF1052
F18	ATF1051
F19	ATF1063
F20	ATF1020
F21	ATF1114
F201	ATG1049
L11-13	LAU2R2M
L15,23,28,29,31, L34,35,37,38	LAU5R6K
L16	ATG1046
L17	ATG1047
L19	ATG1048
L20	ATG1031
L22,30	ATC-250
L32	ATG1030
L36	LAU120K
L39	LAU3R9K
L40	LAU2R2M
L41	LAU1R5M
L201,202,205	LAU4R7J
L203,204,206	ATX1008
L207	LAU150J
L208	LAU100J
VR11	VRTS6VS223
VR13	VRTS6VS472
VR14	VRTS6VS102
VR17	VRTS6VS104
X12	ASS1063
X202	ASS1035
T11,T12	ATG1045

AM-DEMOD ASSEMBLY

IC1012	LA7710
Q1054,1061	2SC2668
Q1060	2SC1740S
F1024	ATF1115
F1025	ATF-183
L1018	ATC-250
L1021	LAU5R6K
VR1012	ACP1043

Q23,29	2SK246
Q24	2SJ103
Q27,30	2SC1740S
Q33	2SA933S

SOUND TRAP ASSEMBLY

F14	ATF-114	F17	ATF-174	L26	LAU4R7K
F15	ATF-172	L24	LAU100K	L27	LAU3R3K
F16	ATF1054	L25	LAU2R2K		

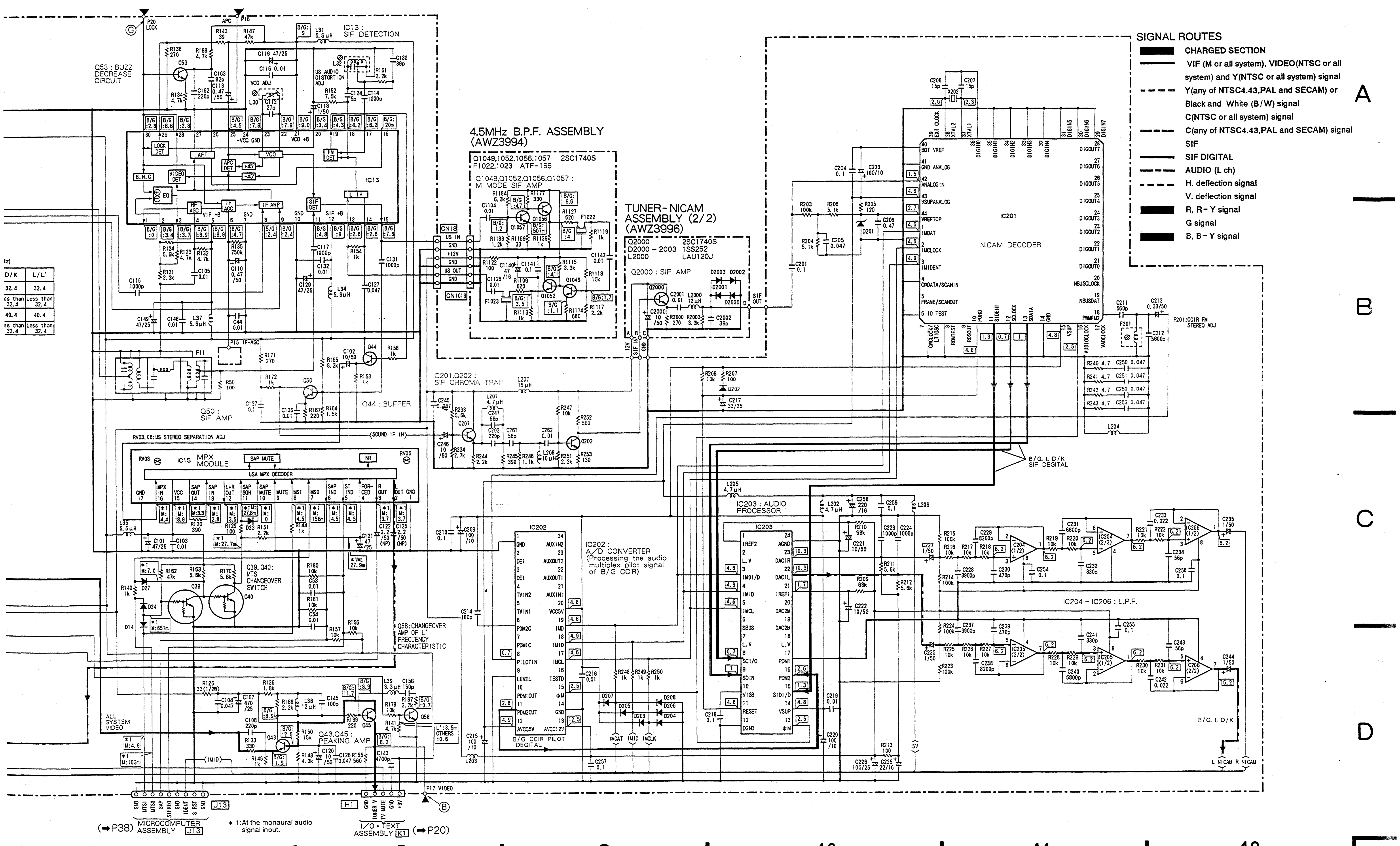
F-1 to F-4 (B.P.F. circuit of 4.5MHz to 6.5MHz)

B.P.F. \ SYSTEM	M	B	G	I	D/K	L/L'
F-1	32.9	31.9	Less than 31.9	32.9	32.4	32.4
F-2	34.4	33.4	33.4	Less than 32.9	Less than 32.4	Less than 32.4
F-3	40.4	40.4	More than 40.4	More than 40.4	40.4	40.4
F-4	34.4	33.4	33.4	Under 32.9	Less than 32.4	Less than 32.4

Unit:MHz

*2
Voltages of J12.

SYSTEM \ Pin	M	B/G	D/K/L	L/L'
M	47.7m	8.1	45m	23m
B/G	7.6	6.0	45m	23m
I	7.6	45m	45m	23m
D/K	7.6	45m	8	23m
L/L'	7.6	45m	8	4.8


7
8
9
10
11
12
A
B
C
D
SIGNAL ROUTES
CHARGED SECTION
VIF (M or all system), VIDEO(NTSC or all system) and Y(NTSC or all system) signal
Y(any of NTSC4.43,PAL and SECAM) or Black and White (B/W) signal
C(NTSC or all system) signal
C(any of NTSC4.43,PAL and SECAM) signal
SIF
SIF DIGITAL
AUDIO (L ch)
H. deflection signal
V. deflection signal
R, R−Y signal
G signal
B, B−Y signal
IC13 : SIF DETECTION
Q53 : BUZZ DECREASE CIRCUIT
US AUDIO DISTORTION ADJ
VCO ADJ
IC13
4.5MHz B.P.F. ASSEMBLY (AWZ3994)
Q1049,1052,1056,1057 2SC1740S
F1022,1023 ATF-166
Q1049,Q1052,Q1056,Q1057 : M MODE SIF AMP
TUNER-NICAM ASSEMBLY (2/2) (AWZ3996)
Q2000 2SC1740S
D2000 - 2003 1SS252
L2000 LAU120J
Q2000 : SIF AMP
SIF OUT
IC201
NICAM DECODER
F201:CCIR FM STEREO ADJ
Q50 : SIF AMP
Q44 : BUFFER
Q201,Q202 : SIF CHROMA TRAP
SOUND IF IN
B/G, I, D/K SIF DEGITAL
RV03,06:US STEREO SEPARATION ADJ
IC15 MPX MODULE
SAP MUTE
NR
USA MPX DECODER
Q39,Q40: MTS CHANGEOVER SWITCH
Q58:CHANGEOVER AMP OF L' FREQUENCY CHARACTERISTIC
IC202
IC202 : A/D CONVERTER (Processing the audio multiplex pilot signal of B/G CCIR)
B/G CCIR PILOT DEGITAL
IC203 : AUDIO PROCESSOR
IC203
IC204 - IC206 : L.P.F.
B/G, I, D/K
L NICAM R NICAM
ALL SYSTEM VIDEO
Q43,Q45 : PEAKING AMP
P15 IF-AGC
P16 APC
P20 LOCK
P17 VIDEO
CN18
CN1018
GND MTS1 MTS0 SAP STEREO GND IDENT S RST GND
J13
GND TUNER V TV MUTE GND +5V
H1
(→P38) MICROCOMPUTER ASSEMBLY J13
* 1:At the monaural audio signal input.
I/O・TEXT ASSEMBLY K1 (→P20)

5.6 VIDEO–AUDIO ASSEMBLY (2/2:VIDEO–DEFLECTION SECTION), R., G. AND B. CRT DRIVE ASSEMBLIES

Note: DC voltage (V) in the VIDEO - AUDIO assembly (2/2) is color bar signal input state.

- Switch the color system of connector B16

Switch / Mode	SW1 (Pin5)	SW2 (Pin3)	SW3 (Pin2)
AUTO	L	L	M ∗ 1
Manual PAL	H	H	H
Manual SECAM	H	L	H
Manual NTSC	L	L	H
Manual NTSC4.43	L	H	H

Note :Input signal from MICROCOMPUTER assembly except ∗ 1.
∗ 1 is output signal from IC356.
H : 6VDC, M : 2VDC, L : 0VDC

- Voltages of Q359 – Q361.

	Q359		Q360		Q361	
	B	C	B	C	B	C
NORMAL	–	9	0.6	0	0.2	10.5
S INPUT	–	0	0	12	0.6	0
SECAM	11.4	–	–	–	–	–
OTHER	12	–	–	–	–	–

- Voltages of IC356 (TA8659AN) (Unit : V)

Pin	Voltage (V)	Remarks	Pin	Voltage (V)	Remarks
1	8.7	–	31	–	–
2	8	–	32	–	–
3	8.7	–	33	6	–
4	6.5	5.5V for SECAM	34	–	–
5	6.5		35	4.1	–
6	12	–	36	7.5	–
7	3.3	–	37	3.1	–
8	6.5	5.5V for SECAM	38	6.7	–
9	6.5		39	5.1	–
10	–	Refer to Table 1 and 2.	40	9.1	–
11	–		41	2.8	At the black level.
12	5.2	–	42	2.8	
13	5.2	–	43	2.8	
14	10.3	8V for PAL, SECAM.	44	3.2	–
			45	3.2	–
15	5.9	–	46	3.2	–
16	11.3	10.7V for B/W, PAL, SECAM.	47	6	–
			48	3	–
17	3.6	–	49	6	–
18	4.5	7.5V for NTSC, NTSC 4.43.	50	GND	–
			51	6	–
19	GND	–	52	GND	–
20	5.9	–	53	GND	–
21	–	Refer to Table 1 and 2.	54	GND	–
22	–		55	8.2	–
23	–		56	3.3	–
24	5.8	–	57	5.9	–
25	6	–	58	4.8	–
26	3.2	–	59	3	–
27	–	Refer to Table 1 and 2.	60	6.2	–
			61	12	–
28	3.2	–	62	6.2	–
29	–	–	63	12	–
30	9.5	–	64	8	–

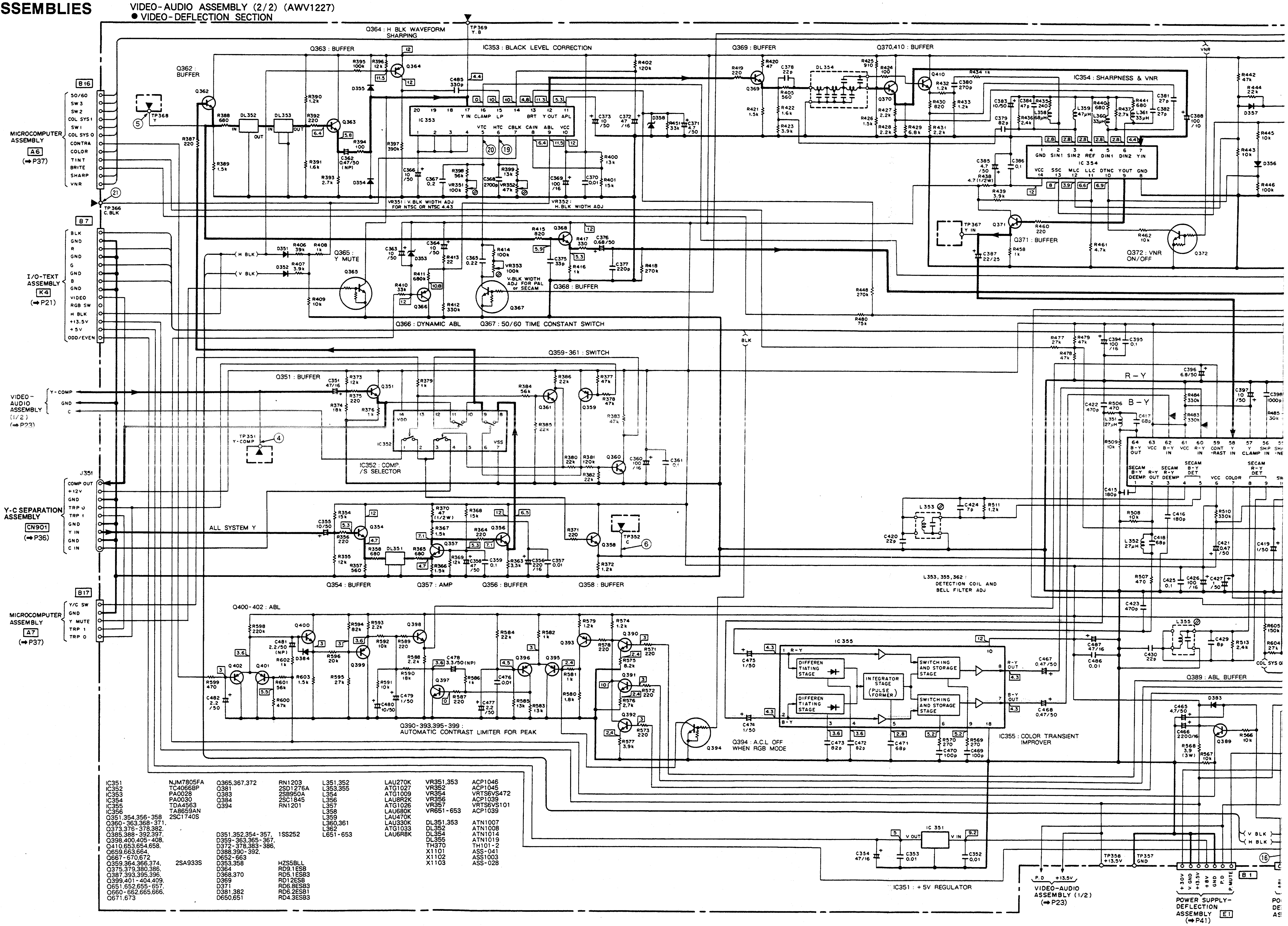
Table 1 Voltages of IC356 for AUTO mode (Unit : V)

System / Pin	PAL	SECAM	NTSC4.43	NTSC
10	6	6	0	0
11	6	2	6	0
21	2	2	2	2
22	11.4	5.3	5.3	5.3
23	5.4	8	5.3	5.3
27	11	4.9	11	11

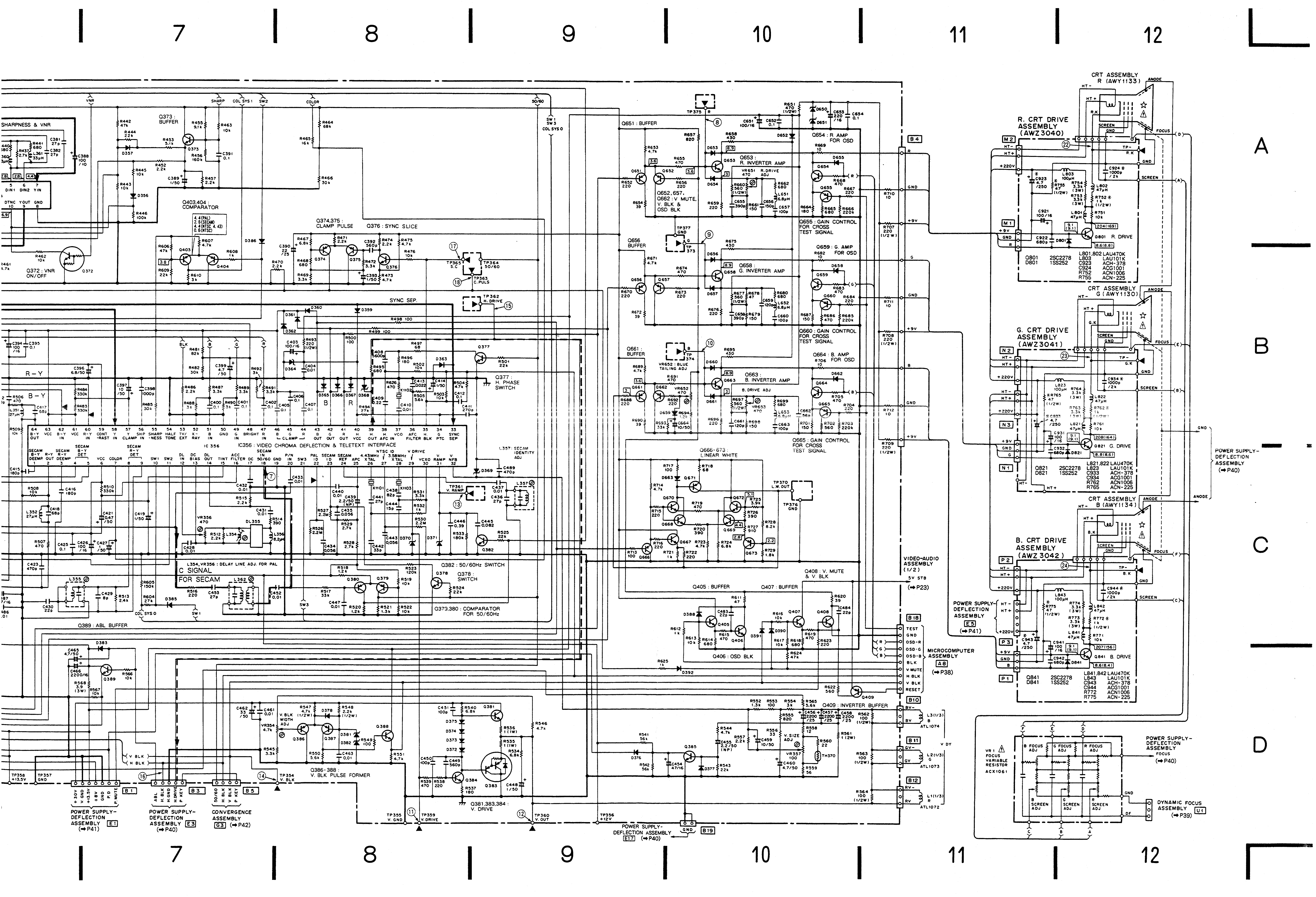
Table 2 Voltages of IC356 for Manual mode (Unit : V)

System / Pin	PAL	SECAM	NTSC4.43	NTSC
10	6	6	0	0
11	6	0	6	0
21	6	6	6	6

VIDEO-AUDIO ASSEMBLY (2/2) (AWV1227)
● VIDEO-DEFLECTION SECTION

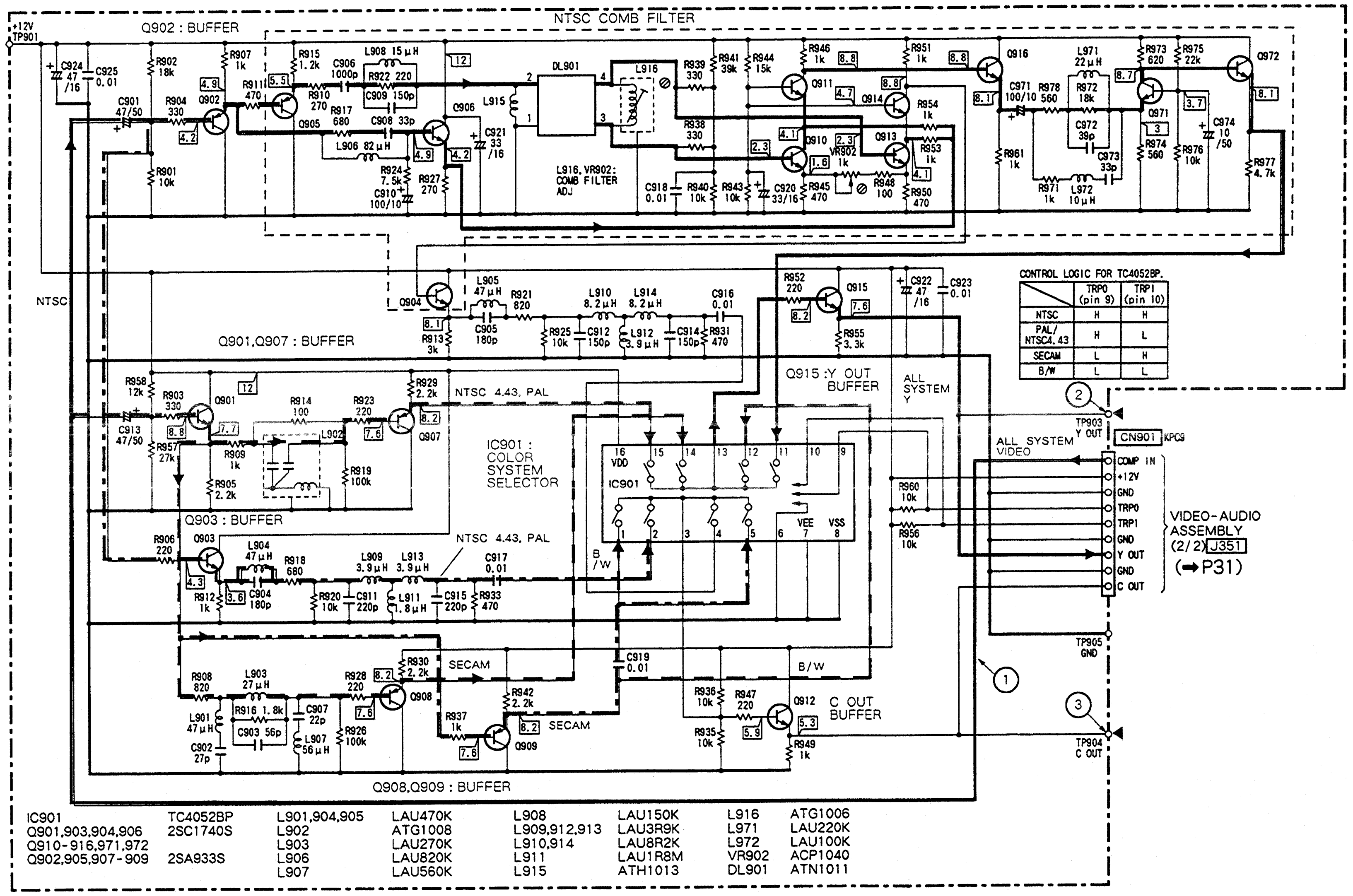

Q364 : H BLK WAVEFORM SHARPING
TP369 Y. B
Q363 : BUFFER
IC353 : BLACK LEVEL CORRECTION
Q369 : BUFFER
Q370,410 : BUFFER
IC354 : SHARPNESS & VNR
Q362 BUFFER
B16
50/60
SW3
SW2
COL SYS I
SW1
COL SYS O
CONTRA
COLOR
TINT
BRITE
SHARP
VNR
MICROCOMPUTER ASSEMBLY
A6
(➡P37)
TP368 Y
DL352
DL353
DL354
TP366 C. BLK
VR351 : V.BLK WIDTH ADJ FOR NTSC OR NTSC 4.43
VR352 : H.BLK WIDTH ADJ
B7
BLK
GND
R
GND
G
GND
B
GND
VIDEO
RGB SW
H BLK
+13.5V
+5V
ODD/EVEN
I/O-TEXT ASSEMBLY
K4
(➡P21)
Q365 : Y MUTE
V.BLK WIDTH ADJ FOR PAL or SECAM
Q368 : BUFFER
Q366 : DYNAMIC ABL
Q367 : 50/60 TIME CONSTANT SWITCH
TP367 Y IN
Q371 : BUFFER
Q372 : VNR ON/OFF
BLK
Q359-361 : SWITCH
Q351 : BUFFER
VIDEO-AUDIO ASSEMBLY (1/2)
(➡P23)
Y-COMP
GND
C
TP351 Y-COMP
IC352 : COMP. /S SELECTOR
R-Y
B-Y
J351
COMP OUT
+12V
GND
TRP U
TRP I
GND
Y IN
GND
C IN
Y-C SEPARATION ASSEMBLY
CN901
(➡P36)
ALL SYSTEM Y
DL351
TP352 C
Q354 : BUFFER
Q357 : AMP
Q356 : BUFFER
Q358 : BUFFER
L353, 355, 362 : DETECTION COIL AND BELL FILTER ADJ
B17
Y/C SW
GND
Y MUTE
TRP 1
TRP 0
MICROCOMPUTER ASSEMBLY
A7
(➡P37)
Q400-402 : ABL
IC355
DIFFERENTIATING STAGE
INTEGRATOR STAGE (PULSE FORMER)
SWITCHING AND STORAGE STAGE
Q390-393,395-399 : AUTOMATIC CONTRAST LIMITER FOR PEAK
Q394 : A.C.L OFF WHEN RGB MODE
IC355 : COLOR TRANSIENT IMPROVER
Q389 : ABL BUFFER
COL SYS O
IC351 : +5V REGULATOR
TP358 +13.5V
TP357 GND
P.D
+13.5V
VIDEO-AUDIO ASSEMBLY (1/2)
(➡P23)
V BLK
H BLK
B1
POWER SUPPLY-DEFLECTION ASSEMBLY E1
(➡P41)

Symbol	Part No.
IC351	NJM7805FA
IC352	TC4066BP
IC353	PA0028
IC354	PA0030
IC355	TDA4563
IC356	TA8659AN
Q351,354,356-358 Q360-363,368-371, Q373,376-378,382, Q385,388-392,397, Q398,400,405-408, Q410,653,654,658, Q659,663,664, Q667-670,672	2SC1740S
Q359,364,366,374, Q375,379,380,386, Q387,393,395,396, Q399,401-404,409, Q651,652,655-657, Q660-662,665,666, Q671,673	2SA933S
Q365,367,372	RN1203
Q381	2SD1276A
Q383	2SB950A
Q384	2SC1845
Q394	RN1201
D351,352,354-357, D359-363,365-367, D372-378,383-386, D388,390-392, D652-663	1SS252
D353,358	HZS5BLL
D364	RD9.1ESB
D368,370	RD5.1ESB3
D369	RD12ESB
D371	RD6.8ESB3
D381,382	RD6.2ESB1
D650,651	RD4.3ESB3
L351,352	LAU270K
L353,355	ATG1027
L354	ATG1009
L356	LAU8R2K
L357	ATG1026
L358	LAU680K
L359	LAU470K
L360,361	LAU330K
L362	ATG1033
L651-653	LAU6R8K
VR351,353	ACP1046
VR352	ACP1045
VR354	VRTS6VS472
VR356	ACP1039
VR357	VRTS6VS101
VR651-653	ACP1039
DL351,353	ATN1007
DL352	ATN1008
DL354	ATN1014
DL355	ATN1019
TH370	TH101-2
X1101	ASS-041
X1102	ASS1003
X1103	ASS-028


7
8
9
10
11
12
A
B
C
D
SHARPNESS & VNR
Q373 : BUFFER
Q403,404 : COMPARATOR
Q372 : VNR ON/OFF
Q374,375 : CLAMP PULSE
Q376 : SYNC SLICE
SYNC SEP.
TP363 S.C
TP364 50/60
TP363 C.PULS
TP362 H. DRIVE
Q377 : H. PHASE SWITCH
IC356 : VIDEO CHROMA DEFLECTION & TELETEXT INTERFACE
L357 : SECAM IDENTITY ADJ
TP361 V. RAMP
VR356 470
DL355
VR354,VR356 : DELAY LINE ADJ. FOR PAL
C SIGNAL FOR SECAM
Q382 : 50/60Hz SWITCH
Q378 : SWITCH
Q373,380 : COMPARATOR FOR 50/60Hz
Q389 : ABL BUFFER
Q386-388 : V. BLK PULSE FORMER
Q381,383,384 : V. DRIVE
TP358 +13.5V
TP357 GND
TP354 V. BLK
TP355 V. GND
TP359 V. DRIVE
TP360 V. OUT
TP356 +12V
POWER SUPPLY-DEFLECTION ASSEMBLY E1 (➡P41)
POWER SUPPLY-DEFLECTION ASSEMBLY E3 (➡P40)
CONVERGENCE ASSEMBLY G3 (➡P42)
POWER SUPPLY-DEFLECTION ASSEMBLY E17 (➡P40)
Q651 : BUFFER
Q652,657, Q662 : V. MUTE, V. BLK & OSD BLK
Q653 : R. INVERTER AMP
VR651 470 R. DRIVE ADJ
Q654 : R AMP FOR OSD
Q655 : GAIN CONTROL FOR CROSS TEST SIGNAL
Q656 BUFFER
Q658 : G. INVERTER AMP
Q659 : G. AMP FOR OSD
Q660 : GAIN CONTROL FOR CROSS TEST SIGNAL
Q661 : BUFFER
VR652 : BLUE TAILING ADJ
Q663 : B. INVERTER AMP
VR653 470 B. DRIVE ADJ
Q664 : B. AMP FOR OSD
Q665 : GAIN CONTROL FOR CROSS TEST SIGNAL
Q666-673 : LINEAR WHITE
TP370 L.W. OUT
TP376 GND
TP375 R
TP377 GND G 373
TP 374 B
Q405 : BUFFER
Q407 : BUFFER
Q408 : V. MUTE & V. BLK
Q406 : OSD BLK
Q409 : INVERTER BUFFER
Q385
VR357 V. SIZE ADJ
VIDEO-AUDIO ASSEMBLY (1/2) 5V STB (➡P23)
MICROCOMPUTER ASSEMBLY A8 (➡P38)
TEST GND OSD-R OSD-G OSD-B BLK V.MUTE H.BLK V.BLK RESET
B4 B18 B10 B11 B12 B19
L3(1/3) B ATL1074
L2(1/3) G ATL1073
L1(1/3) R ATL1072
V DY
CRT ASSEMBLY R (AWY1133)
R. CRT DRIVE ASSEMBLY (AWZ3040)
Q801 R. DRIVE
Q801 2SC2278 D801 1SS252
L801,802 LAU470K L803 LAU101K C923 ACH-378 C924 ACG1001 R752 ACN1006 R755 ACN-225
CRT ASSEMBLY G (AWY1130)
G. CRT DRIVE ASSEMBLY (AWZ3041)
Q821 G. DRIVE
Q821 2SC2278 D821 1SS252
L821,822 LAU470K L823 LAU101K C933 ACH-378 C934 ACG1001 R762 ACN1006 R765 ACN-225
CRT ASSEMBLY B (AWY1134)
B. CRT DRIVE ASSEMBLY (AWZ3042)
Q841 B. DRIVE
Q841 2SC2278 D841 1SS252
L841,842 LAU470K L843 LAU101K C943 ACH-378 C944 ACG1001 R772 ACN1006 R775 ACN-225
ANODE
FOCUS
SCREEN
HT+ HT- +220V +9V GND
POWER SUPPLY-DEFLECTION ASSEMBLY (➡P40)
POWER SUPPLY-DEFLECTION ASSEMBLY E5 (➡P41)
VR1 FOCUS VARIABLE RESISTOR ACX1061
B FOCUS ADJ
G FOCUS ADJ
R FOCUS ADJ
B SCREEN ADJ
G SCREEN ADJ
R SCREEN ADJ
POWER SUPPLY-DEFLECTION ASSEMBLY FOCUS (➡P40)
DYNAMIC FOCUS ASSEMBLY U1 (➡P39)
M1 M2 N1 N2 N3 P1 P2 P3

5.7 Y-C SEPARATION ASSEMBLY

Y-C SEPARATION ASSEMBLY (AWZ3999)


NTSC COMB FILTER
+12V
TP901
Q902 : BUFFER
Q901,Q907 : BUFFER
Q903 : BUFFER
Q908,Q909 : BUFFER
Q915 :Y OUT BUFFER
C OUT BUFFER
IC901 : COLOR SYSTEM SELECTOR
NTSC
NTSC 4.43, PAL
SECAM
B/W
ALL SYSTEM Y
ALL SYSTEM VIDEO
TP903 Y OUT
TP904 C OUT
TP905 GND
CN901 KPC9
COMP IN
+12V
GND
TRP0
TRP1
GND
Y OUT
GND
C OUT
VIDEO-AUDIO ASSEMBLY (2/2) J351
(➡P31)
DL901
L916, VR902: COMB FILTER ADJ
①
②
③

CONTROL LOGIC FOR TC4052BP.

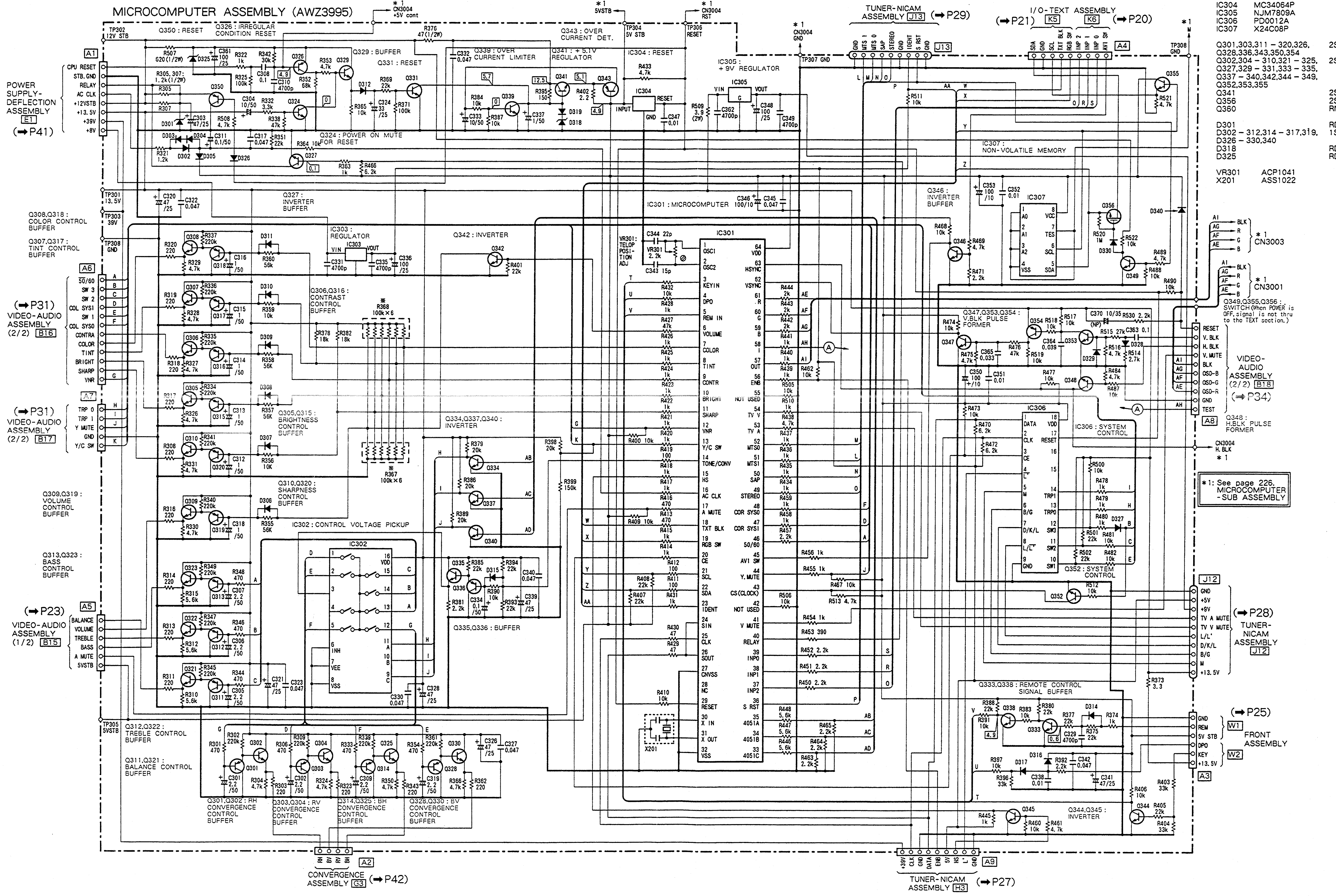
	TRP0 (pin 9)	TRP1 (pin 10)
NTSC	H	H
PAL/ NTSC4.43	H	L
SECAM	L	H
B/W	L	L

IC901	TC4052BP	L901,904,905	LAU470K	L908	LAU150K	L916	ATG1006
Q901,903,904,906	2SC1740S	L902	ATG1008	L909,912,913	LAU3R9K	L971	LAU220K
Q910-916,971,972		L903	LAU270K	L910,914	LAU8R2K	L972	LAU100K
Q902,905,907-909	2SA933S	L906	LAU820K	L911	LAU1R8M	VR902	ACP1040
		L907	LAU560K	L915	ATH1013	DL901	ATN1011

5.8 MICROCOMPUTER ASSEMBLY

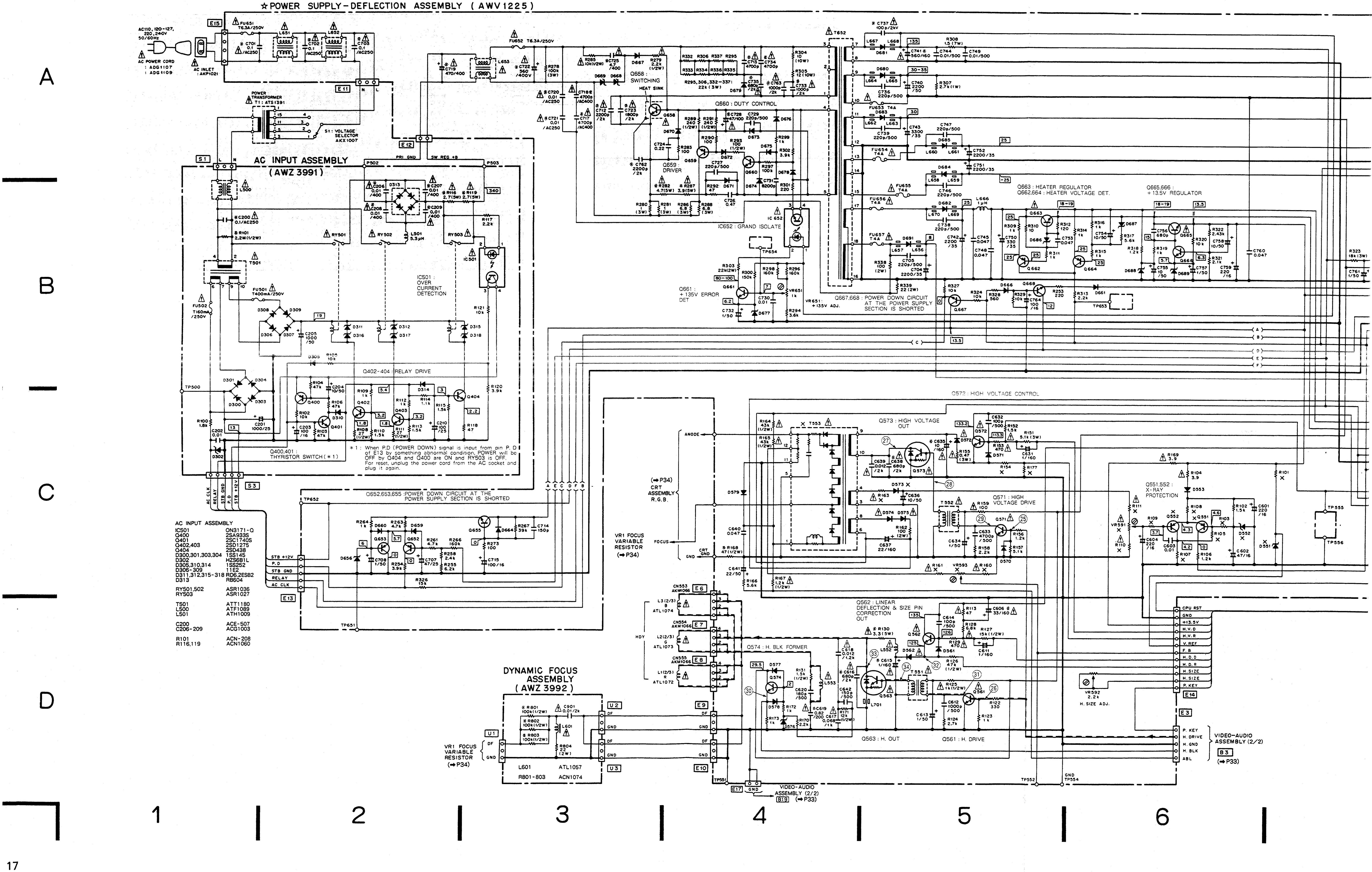
MICROCOMPUTER ASSEMBLY

IC301	PD5173B9	
IC302	MC14051BCP	
IC303	NJM7805FA	
IC304	MC34064P	
IC305	NJM7809A	
IC306	PD0012A	
IC307	X24C08P	
Q301,303,311 – 320,326, Q328,336,343,350,354		2SA933S
Q302,304 – 310,321 – 325, Q327,329 – 331,333 – 335, Q337 – 340,342,344 – 349, Q352,353,355		2SC1740S
Q341		2SD438
Q356		2SJ103
Q360		RN1203
D301		RD5.6ESB3
D302 – 312,314 – 317,319, D326 – 330,340		1SS252
D318		RD5.1ESB2
D325		RD5.1ESB3
VR301	ACP1041	
X201	ASS1022	



1
2
3
4
5
6
A
B
C
D
MICROCOMPUTER ASSEMBLY (AWZ3995)
POWER SUPPLY-DEFLECTION ASSEMBLY E1 (→P41)
A1
CPU RESET
STB. GND
RELAY
AC CLK
+12VSTB
+13.5V
+39V
+8V
Q350 : RESET
Q326 : IRREGULAR CONDITION RESET
Q329 : BUFFER
Q331 : RESET
Q339 : OVER CURRENT LIMITER
Q341 : +5.1V REGULATOR
Q343 : OVER CURRENT DET.
IC304 : RESET
IC305 : +9V REGULATOR
Q324 : POWER ON MUTE
Q364 : FOR RESET
Q327 : INVERTER BUFFER
Q308,Q318 : COLOR CONTROL BUFFER
Q307,Q317 : TINT CONTROL BUFFER
IC303 : REGULATOR
Q342 : INVERTER
Q306,Q316 : CONTRAST CONTROL BUFFER
Q305,Q315 : BRIGHTNESS CONTROL BUFFER
Q334,Q337,Q340 : INVERTER
Q310,Q320 : SHARPNESS CONTROL BUFFER
Q309,Q319 : VOLUME CONTROL BUFFER
IC302 : CONTROL VOLTAGE PICKUP
Q313,Q323 : BASS CONTROL BUFFER
Q335,Q336 : BUFFER
Q312,Q322 : TREBLE CONTROL BUFFER
Q311,Q321 : BALANCE CONTROL BUFFER
Q301,Q302 : RH CONVERGENCE CONTROL BUFFER
Q303,Q304 : RV CONVERGENCE CONTROL BUFFER
Q314,Q325 : BH CONVERGENCE CONTROL BUFFER
Q328,Q330 : BV CONVERGENCE CONTROL BUFFER
(→P31) VIDEO-AUDIO ASSEMBLY (2/2) B16
A6
50/60
SW 3
SW 2
COL SYS1
SW 1
COL SYS0
CONTRA
COLOR
TINT
BRIGHT
SHARP
VNR
A7
(→P31) VIDEO-AUDIO ASSEMBLY (2/2) B17
TRP 0
TRP 1
Y MUTE
GND
Y/C SW
(→P23) VIDEO-AUDIO ASSEMBLY (1/2) B15
A5
BALANCE
VOLUME
TREBLE
BASS
A MUTE
5VSTB
CONVERGENCE ASSEMBLY G3 (→P42)
A2
IC301 : MICROCOMPUTER
VR301 : TELOP POSITION ADJ
X201
IC301
OSC1
OSC2
KEYIN
DPO
REM IN
VOLUME
COLOR
TINT
CONTR
BRIGHT
SHARP
VNR
Y/C SW
TONE/CONV
HS
AC CLK
A MUTE
TXT BLK
RGB SW
CE
SCL
SDA
IDENT
SIN
CLK
SOUT
CNVSS
NC
RESET
X IN
X OUT
VSS
VDD
HSYNC
VSYNC
R
G
B
I
OUT
ENB
NOT USED
TV V
TV A
MTS0
MTS1
SAP
STEREO
COR SYS0
COR SYS1
50/60
AV1 SW
Y. MUTE
CS(CLOCK)
V MUTE
RELAY
INP0
INP1
INP2
S RST
4051A
4051B
4051C
TUNER-NICAM ASSEMBLY J13 (→P29)
I/O-TEXT ASSEMBLY (→P21) K5 K6 (→P20)
A4
IC307 : NON-VOLATILE MEMORY
Q346 : INVERTER BUFFER
IC307
Q349,Q355,Q356 : SWITCH (When POWER is OFF, signal is not thru to the TEXT section.)
CN3003
CN3001
Q347,Q353,Q354 : V.BLK PULSE FORMER
VIDEO-AUDIO ASSEMBLY (2/2) B18 (→P34)
A8
RESET
V. BLK
H. BLK
V. MUTE
BLK
OSD-B
OSD-G
OSD-R
GND
TEST
Q348 : H.BLK PULSE FORMER
IC306 : SYSTEM CONTROL
CN3004 H. BLK
*1: See page 226. MICROCOMPUTER-SUB ASSEMBLY
Q352 : SYSTEM CONTROL
J12
(→P28) TUNER-NICAM ASSEMBLY J12
GND
+5V
+9V
TV A MUTE
TV V MUTE
L/L'
D/K/L
B/G
M
+13.5V
Q333,Q338 : REMOTE CONTROL SIGNAL BUFFER
(→P25) W1 FRONT ASSEMBLY W2
A3
GND
REM
5V STB
DPO
KEY
+13.5V
Q344,Q345 : INVERTER
TUNER-NICAM ASSEMBLY H3 (→P27)
A9

5.9 POWER SUPPLY–DEFLECTION, AC INPUT, DYNAMIC FOCUS, DEFLECTION PROTECT AND HIGH VOLTAGE CONTROL ASSEMBLIES


1
2
3
4
5
6
A
B
C
D
☆POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225)
AC110, 120-127, 220, 240V 50/60Hz
AC POWER CORD : ADG1107 : ADG1109
AC INLET : AKP1021
E15
FU651 T6.3A/250V
L651
L652
C701 0.1 /AC250
C702 0.1 /AC250
C703 0.1 /AC250
E11
POWER TRANSFORMER T1 : ATS1391
S1 : VOLTAGE SELECTOR AKX1007
E12
PRI GND
SW REG +B
S1
AC INPUT ASSEMBLY
(AWZ 3991)
P502
P503
L500
C200 0.1/AC250
R101 2.2M(1/2W)
T501
FU501 T400mA/250V
FU502 T160mA /250V
RY501
RY502
RY503
L501 5.3μH
IC501
IC501 : OVER CURRENT DETECTION
D313
Q402-404 : RELAY DRIVE
Q400,401 : THYRISTOR SWITCH (*1)
TP500
S3
AC CLK
RELAY
STB GND
P.D
STB +12V
FU652 T6.3A/250V
L653
Q658 : SWITCHING
HEAT SINK
Q659 : DRIVER
Q660 : DUTY CONTROL
IC652 : GRAND ISOLATE
IC 652
TP654
Q661 : +135V ERROR DET
VR651 +135V ADJ.
Q667,668 : POWER DOWN CIRCUIT AT THE POWER SUPPLY SECTION IS SHORTED
T652
Q663 : HEATER REGULATOR
Q662,664 : HEATER VOLTAGE DET.
Q665,666 : +13.5V REGULATOR
TP653
Q652,653,655 : POWER DOWN CIRCUIT AT THE POWER SUPPLY SECTION IS SHORTED
TP652
TP651
E13
Q572 : HIGH VOLTAGE CONTROL
Q573 : HIGH VOLTAGE OUT
Q571 : HIGH VOLTAGE DRIVE
T553
T552
ANODE
FOCUS
CRT GND
(➡P34) CRT ASSEMBLY R.G.B.
VR1 FOCUS VARIABLE RESISTOR (➡P34)
Q551,552 : X-RAY PROTECTION
TP555
TP556
CN553 AKM1066
E6
L3(2/3) B ATL1074
CN554 AKM1066
E7
L2(2/3) G ATL1073
HDY
CN555 AKM1066
E8
L1(2/3) R ATL1072
Q562 : LINEAR DEFLECTION & SIZE PIN CORRECTION OUT
Q574 : H. BLK FORMER
Q563 : H. OUT
Q561 : H. DRIVE
T551
L701
VR592 2.2k H. SIZE ADJ.
E14
CPU RST
GND
+13.5V
H.V.D
H.V.R
V.REF
F.B
H.D.D
H.D.R
H.SIZE
H.SIZE
P.KEY
E3
P. KEY
H. DRIVE
H. GND
H. BLK
ABL
VIDEO-AUDIO ASSEMBLY (2/2)
B3
(➡P33)
E9
E10
E17
TP551
TP552
TP554
VIDEO-AUDIO ASSEMBLY (2/2) B19 (➡P33)
DYNAMIC FOCUS ASSEMBLY (AWZ 3992)
U1
U2
U3
VR1 FOCUS VARIABLE RESISTOR (➡P34)
DF
GND
L601 ATL1057
R801-803 ACN1074

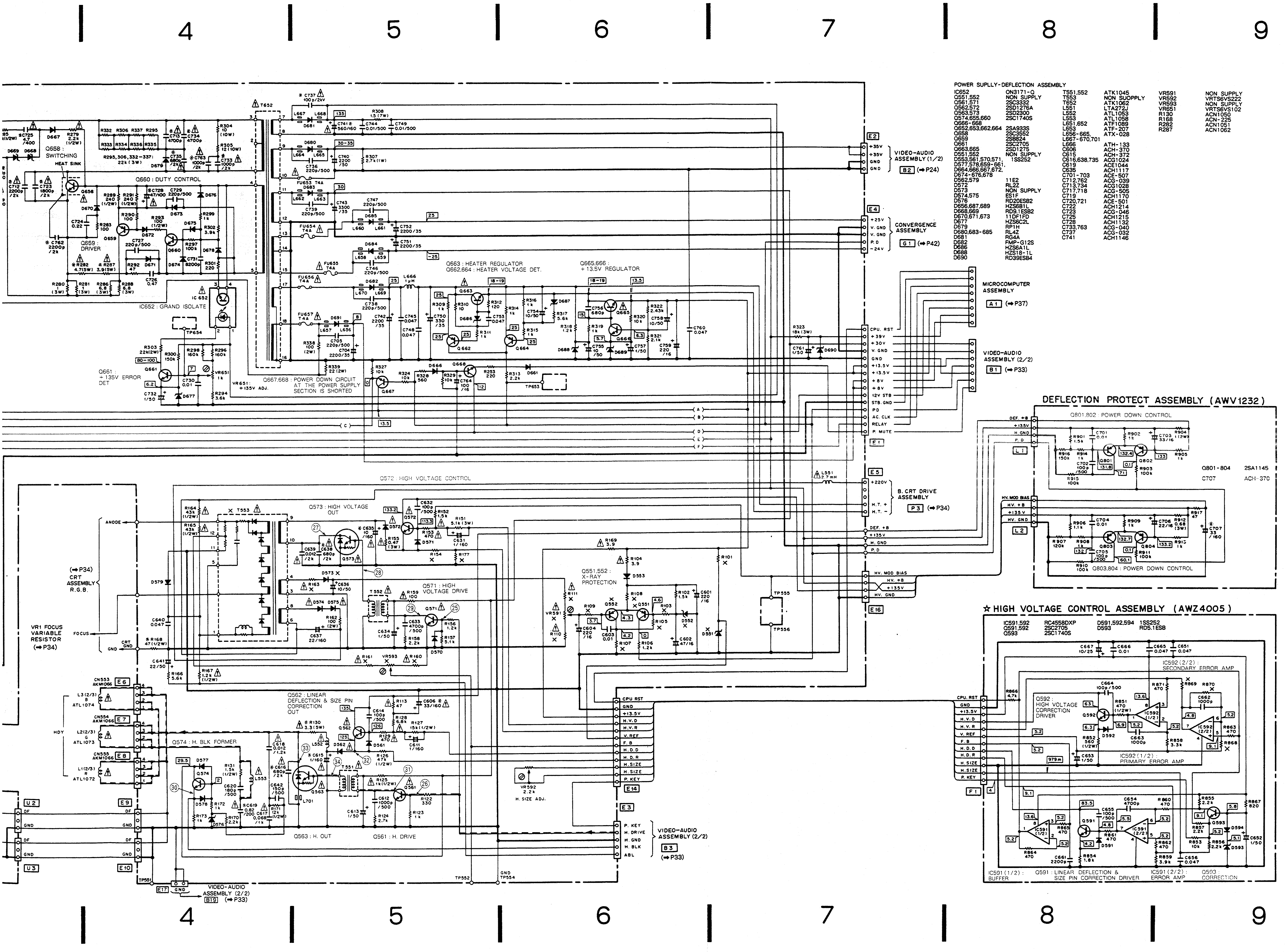
AC INPUT ASSEMBLY

IC501	ON3171-Q
Q400	2SA933S
Q401	2SC1740S
Q402,403	2SD1275
Q404	2SD438
D300,301,303,304	1SS145
D302	HZS6B1L
D305,310,314	1SS252
D306-309	11E2
D311,312,315-318	RD6.2ESB2
D313	RB604
RY501,502	ASR1036
RY503	ASR1027
T501	ATT1180
L500	ATF1089
L501	ATH1009
C200	ACE-507
C206-209	ACG1003
R101	ACN-208
R116,119	ACN1060

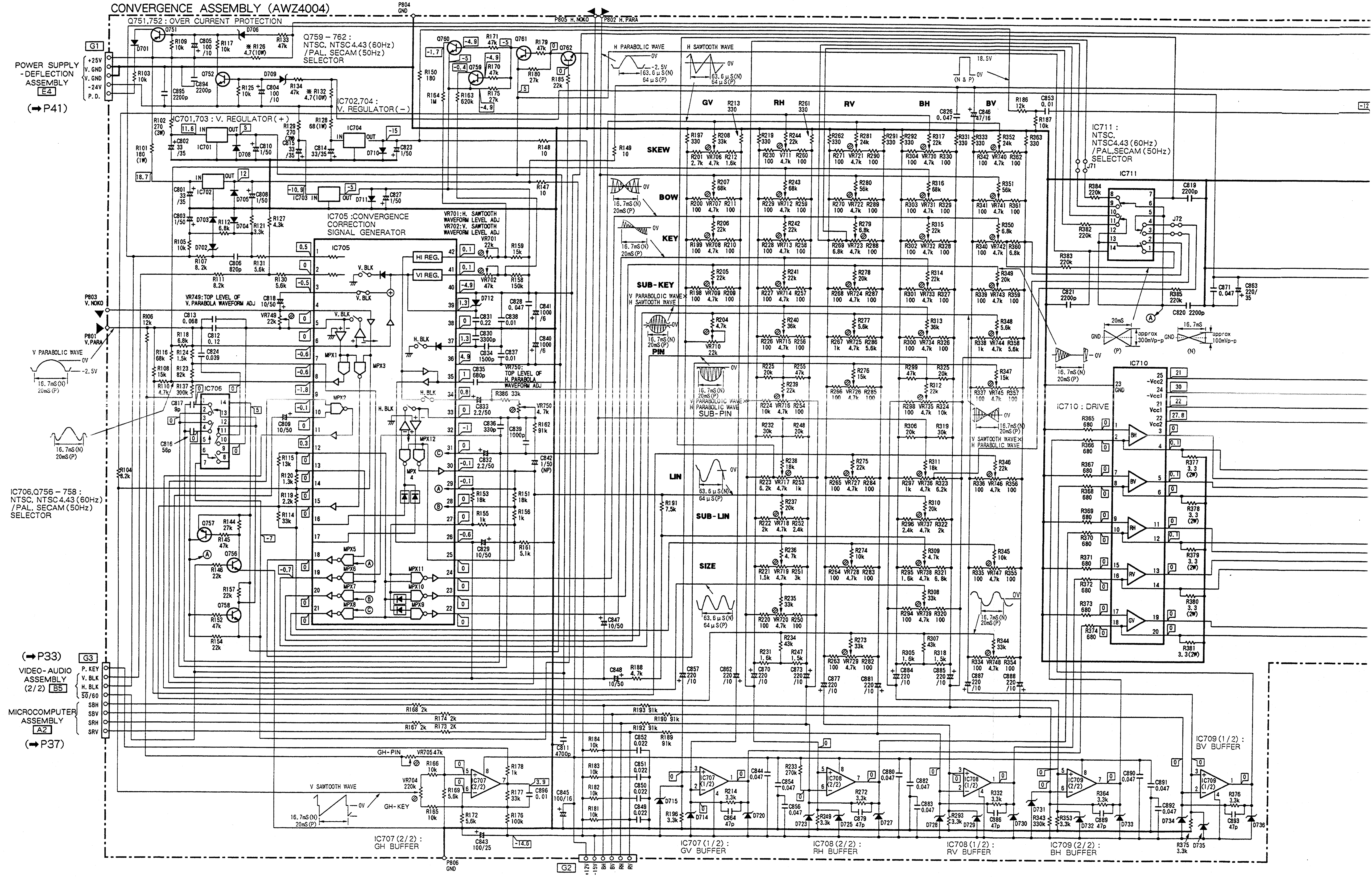
*1 : When P.D (POWER DOWN) signal is input from pin P. D of E13 by something abnormal condition, POWER will be OFF by Q404 and Q400 are ON and RY503 is OFF. For reset, unplug the power cord from the AC socket and plug it again.

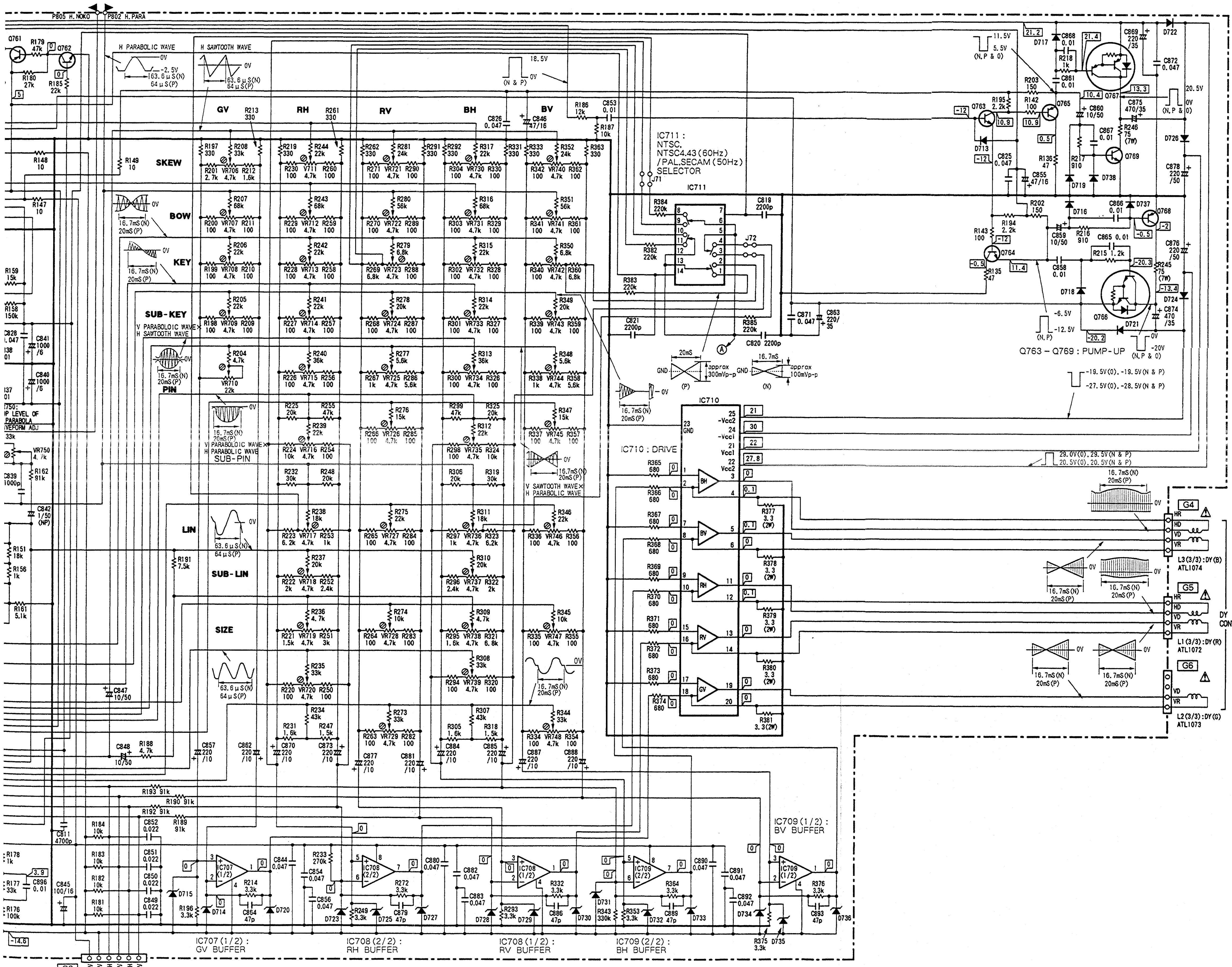
POWER SUPLLY-DEFLECTION ASSEMBLY

IC652	ON3171-Q	T551,552	ATK1045	VR591	NON SUPPLY
Q551,552	NON SUPPLY	T553	NON SUOPPLY	VR592	VRTS6VS222
Q561,571	2SC3332	T652	ATK1062	VR593	NON SUPPLY
Q562,572	2SD1276A	L551	LTA272J	VR651	VRTS6VS102
Q563,573	2SD2300	L552	ATL1053	R130	ACN1050
Q574,655,660	2SC1740S	L553	ATL1058	R168	ACN-225
Q666-668		L651,652	ATF1089	R282	ACN1051
Q652,653,662,664	2SA933S	L653	ATF-207	R287	ACN1062
Q658	2SC3552	L656-665,	ATX-028		
Q659	2SB824	L667-670,701			
Q661	2SC2705	L666	ATH-133		
Q663,665	2SD1275	C606	ACH-370		
D551,552	NON SUPPLY	C615	ACH-372		
D553,561,570,571,	1SS252	C616,638,735	ACG1024		
D577,578,659-661,		C619	ACE1044		
D664,666,667,672,		C635	ACH1117		
D674-676,678		C701-703	ACE-507		
D562,579	11E2	C712,762	ACG-039		
D572	RL2Z	C713,734	ACG1028		
D573	NON SUPPLY	C717,718	ACG-505		
D574,575	ES1F	C719	ACH1170		
D576	RD20ESB2	C720,721	ACE-501		
D656,687,689	HZS6B1L	C722	ACH1214		
D668,669	RD9.1ESB2	C723	ACG-046		
D670,671,673	11DF1FD	C725	ACH1215		
D677	HZS6C2L	C728	ACH1132		
D679	RP1H	C733,763	ACG-040		
D680,683-685	RL4Z	C737	ACG-032		
D681	RG4A	C741	ACH1146		
D682	FMP-G12S				
D686	HZS6A1L				
D688	HZS18-1L				
D690	RD39ESB4				


4
5
6
7
8
9
A
B
C
D
Q658 : SWITCHING
HEAT SINK
Q660 : DUTY CONTROL
Q659 DRIVER
IC652 : GRAND ISOLATE
T652
Q661 : +135V ERROR DET
VR651 : +135V ADJ.
Q667,668 : POWER DOWN CIRCUIT AT THE POWER SUPPLY SECTION IS SHORTED
Q663 : HEATER REGULATOR
Q662,664 : HEATER VOLTAGE DET.
Q665,666 : +13.5V REGULATOR
VIDEO-AUDIO ASSEMBLY (1/2)
B2 (➡P24)
CONVERGENCE ASSEMBLY
G1 (➡P42)
MICROCOMPUTER ASSEMBLY
A1 (➡P37)
VIDEO-AUDIO ASSEMBLY (2/2)
B1 (➡P33)
B. CRT DRIVE ASSEMBLY
P3 (➡P34)
Q572 : HIGH VOLTAGE CONTROL
Q573 : HIGH VOLTAGE OUT
Q571 : HIGH VOLTAGE DRIVE
T553
T552
Q551,552 : X-RAY PROTECTION
CRT ASSEMBLY R.G.B.
(➡P34)
ANODE
FOCUS
VR1 FOCUS VARIABLE RESISTOR (➡P34)
CRT GND
HDY
Q562 : LINEAR DEFLECTION & SIZE PIN CORRECTION OUT
Q574 : H. BLK FORMER
Q563 : H. OUT
Q561 : H. DRIVE
VR592 2.2k H. SIZE ADJ.
VIDEO-AUDIO ASSEMBLY (2/2)
B3 (➡P33)
VIDEO-AUDIO ASSEMBLY (2/2)
B19 (➡P33)
DEFLECTION PROTECT ASSEMBLY (AWV1232)
Q801,802 : POWER DOWN CONTROL
Q803,804 : POWER DOWN CONTROL
Q801-804 2SA1145
C707 ACH-370
☆ HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)
IC591,592 RC4558DXP
Q591,592 2SC2705
Q593 2SC1740S
D591,592,594 1SS252
D593 RD5.1ESB
Q592 : HIGH VOLTAGE CORRECTION DRIVER
IC592 (2/2) : SECONDARY ERROR AMP
IC592 (1/2) : PRIMARY ERROR AMP
IC591 (1/2) : BUFFER
Q591 : LINEAR DEFLECTION & SIZE PIN CORRECTION DRIVER
IC591 (2/2) : ERROR AMP
Q593 : CORRECTION

5.10 CONVERGENCE ASSEMBLY


CONVERGENCE ASSEMBLY (AWZ4004)
Q751,752 : OVER CURRENT PROTECTION
Q759 - 762 : NTSC, NTSC4.43 (60Hz) / PAL, SECAM (50Hz) SELECTOR
POWER SUPPLY - DEFLECTION ASSEMBLY
E4
(➡P41)
G1
+25V
V. GND
V. GND
-24V
P. D.
IC701,703 : V. REGULATOR (+)
IC702,704 : V. REGULATOR (-)
IC705 : CONVERGENCE CORRECTION SIGNAL GENERATOR
VR701 : H. SAWTOOTH WAVEFORM LEVEL ADJ
VR702 : V. SAWTOOTH WAVEFORM LEVEL ADJ
VR749 : TOP LEVEL OF V. PARABOLA WAVEFORM ADJ
VR750 : TOP LEVEL OF H. PARABOLA WAVEFORM ADJ
HI REG.
VI REG.
V. BLK
H. BLK
MPX1
MPX2
MPX3
MPX4
MPX5
MPX6
MPX7
MPX8
MPX9
MPX10
MPX11
MPX12
P803 V. NOKO
P801 V. PARA
V PARABOLIC WAVE
16.7mS (N) 20mS (P)
IC706,Q756 - 758 : NTSC, NTSC4.43 (60Hz) / PAL, SECAM (50Hz) SELECTOR
H PARABOLIC WAVE
H SAWTOOTH WAVE
63.6 µS (N) 64 µS (P)
GV
RH
RV
BH
BV
SKEW
BOW
KEY
SUB-KEY
PIN
SUB-PIN
LIN
SUB-LIN
SIZE
V PARABOLIC WAVE × H SAWTOOTH WAVE
V SAWTOOTH WAVE × H PARABOLIC WAVE
IC711 : NTSC, NTSC4.43 (60Hz) / PAL, SECAM (50Hz) SELECTOR
IC710 : DRIVE
approx 300mVp-p
approx 100mVp-p
(➡P33)
G3
VIDEO-AUDIO ASSEMBLY (2/2)
B5
P. KEY
V. BLK
H. BLK
50/60
SBH
SBV
SRH
SRV
MICROCOMPUTER ASSEMBLY
A2
(➡P37)
GH-PIN
GH-KEY
V SAWTOOTH WAVE
IC707 (2/2) : GH BUFFER
IC707 (1/2) : GV BUFFER
IC708 (2/2) : RH BUFFER
IC708 (1/2) : RV BUFFER
IC709 (2/2) : BH BUFFER
IC709 (1/2) : BV BUFFER
P804 GND
P806 GND
P805 H. NOKO
P802 H. PARA
G2
+12V
-15V
BH
BV
RH
RV
1
2
3
4
5
6
A
B
C
D


P805 H.NOKO
P802 H.PARA
H PARABOLIC WAVE
H SAWTOOTH WAVE
GV
RH
RV
BH
BV
SKEW
BOW
KEY
SUB-KEY
PIN
SUB-PIN
LIN
SUB-LIN
SIZE
IC711 : NTSC, NTSC4.43 (60Hz) /PAL,SECAM (50Hz) SELECTOR
IC711
IC710
IC710 : DRIVE
Q763 – Q769 : PUMP-UP
G4
G5
G6
DY CONVERGENCE
L3 (3/3) : DY (B) ATL1074
L1 (3/3) : DY (R) ATL1072
L2 (3/3) : DY (G) ATL1073
IC709 (1/2) : BV BUFFER
IC707 (1/2) : GV BUFFER
IC708 (2/2) : RH BUFFER
IC708 (1/2) : RV BUFFER
IC709 (2/2) : BH BUFFER
G2

CONVERGENCE ASSEMBLY

IC701	NJM78M05FAS
IC702	UPC78L12J
IC703	NJM79M05FA
IC704	NJM79L15A
IC705	PA0036
IC706,711	TC4066BP
IC707 – 709	M5238LF
IC710	STK4277A-SL
Q751,757,761,765	2SA933S
Q752,756,758 – 760, Q762 – 764	2SC1740S
Q766	2SD1276A
Q767	2SB950A
Q768	2SA1306
Q769	2SC3298
D701,703 – 705,707, D708,710,711,713, D716 – 719,737,738	1SS252
D702	RD8.2ESB
D706,709	RD5.6ESB3
D712	HZS12BL
D714,715,720,723, D725,727 – 736	UZ-27BSB
D721,722	11DF2FD
D724,726	11E2
VR701,710,749	: ACP1044
VR702,705	: ACP1045
VR704	: ACP1047
VR706 – 709, VR711 – 748	: ACP1042
VR750	: VRTS6VS472
R245,246	: ACN1084

Note : Marked ( ) which are nearly waveforms are meaned as follows.

- (N) : For NTSC and NTSC 4.43 signal
- (P) : For PAL and SECAM signal
- (0) : For no signal

A

B

C

D

The waveformes at each position

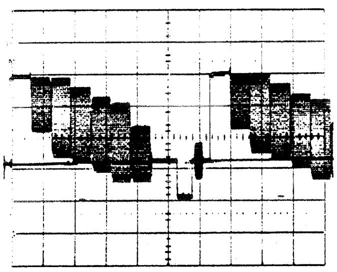
Table 1. H and V values of each system

	NTSC/NTSC 4.43	PAL/SECAM
V (msec)	16.7 (60Hz)	20.0 (50Hz)
H (μsec)	63.6 (15.75kHz)	64.0 (15.625kHz)

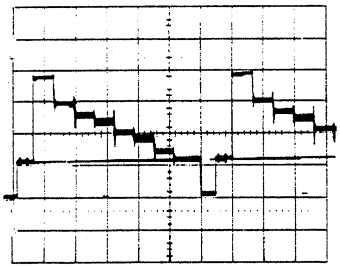
• Y-C SEPARATION assembly

(1) For PAL color-bar signal input

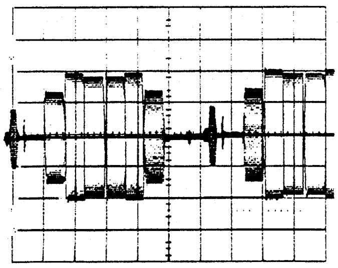
① **CN901 pin COMP IN**
V range : 500mV/div.
H range : 10 μsec/div.



② **TP-Y OUT (TP-903)**
V range : 500mV/div.
H range : 10 μsec/div.



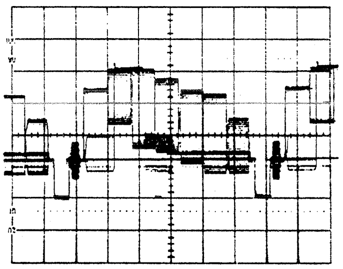
③ **TP-C OUT (TP-904)**
V range : 100mV/div.
H range : 10 μsec/div.



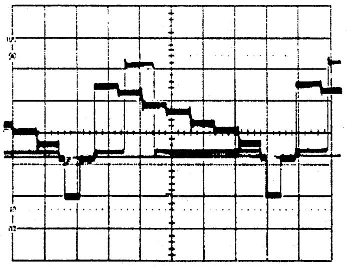
• VIDEO-AUDIO assembly

(1) For NTSC/NTSC 4.43 color-bar signal input

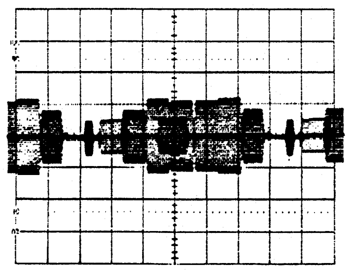
④ **TP-Y/COMP (TP-351)**
V range : 0.5V/div.
H range : 10 μsec/div.



⑤ **TP-Y (TP-368)**
V range : 0.5V/div.
H range : 10 μsec/div.

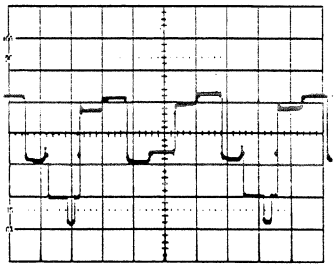


⑥ **TP-C IN (TP-352)**
V range : 0.2V/div.
H range : 10 μsec/div.

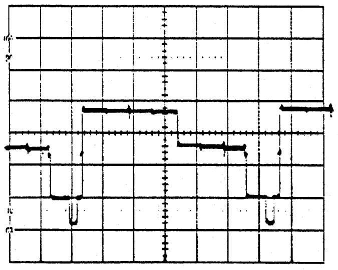


⑦

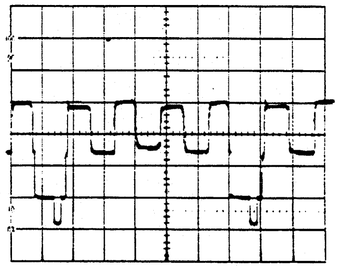
⑧ **TP-R (TP-375)**
V range : 1V/div.
H range : 10 μsec/div.



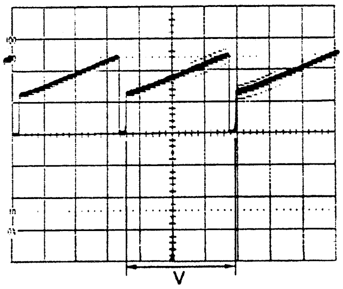
⑨ **TP-G (TP-373)**
V range : 1V/div.
H range : 10 μsec/div.



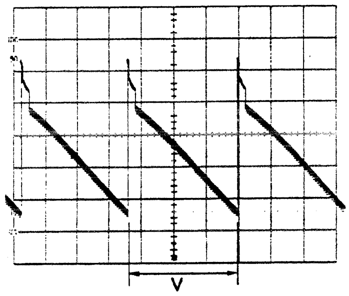
⑩ **TP-B (TP-374)**
V range : 1V/div.
H range : 10 μsec/div.



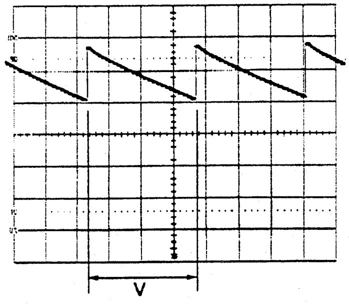
⑪ **TP-V.DRIVE (TP-359)**
V range : 0.5V/div.
H range : 5msec/div.



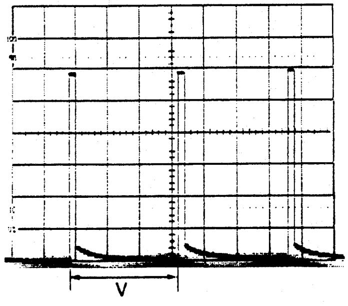
⑫ **TP-V. OUT (TP-360)**
V range : 5V/div.
H range : 5msec/div.



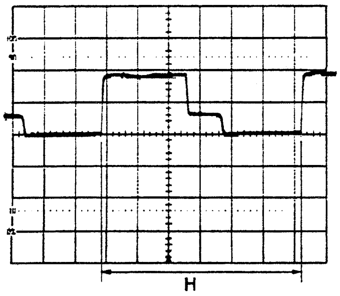
⑬ **TP-V. RAMP (TP-361)**
V range : 1V/div.
H range : 5msec/div.



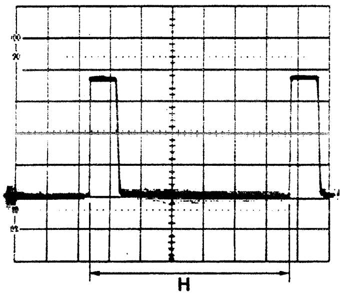
⑭ **TP-V. BLK (TP-354)**
V range : 2V/div.
H range :5msec/div.



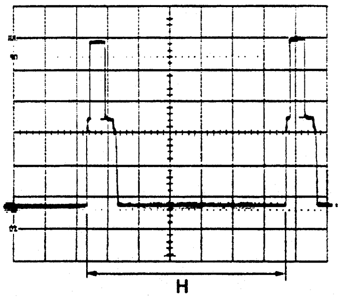
⑮ **TP-H. DRIVE (TP-362)**
V range :1V/div.
H range : 10 μsec/div.



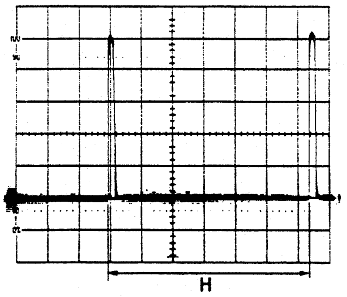
⑯ **Connector B3 , pin H. BLK**
V range : 5V/div.
H range : 10 μsec/div.



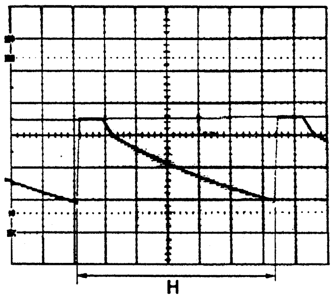
⑰ **TP-S.C (TP-365)**
V range : 2V/div.
H range : 10 μsec/div.



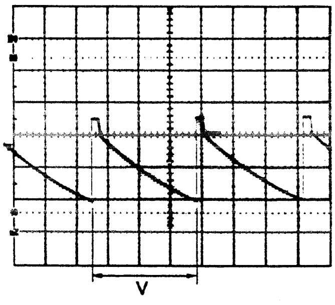
⑱ **TP-C. PULS (TP-363)**
V range : 1V/div.
H range : 10 μsec/div.



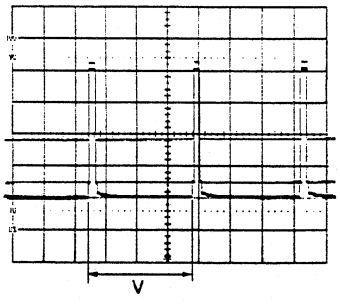
⑲ **IC353 pin 6 (HTC)**
V range : 2V/div.
H range : 10 μsec/div.



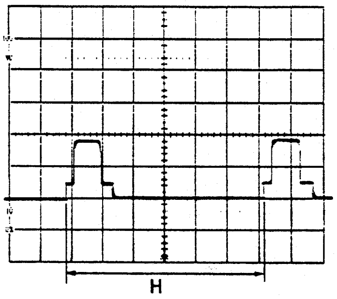
⑳ **IC353 pin 5 (VTC)**
V range : 2V/div.
H range : 5msec/div.



㉑-1 **TP-C. BLK (TP-366)**
V range : 2V/div.
H range : 5msec/div.

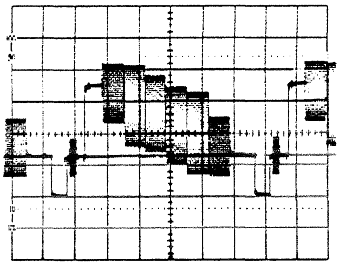


㉑-2 **TP-C. BLK (TP-366)**
V range :2V/div.
H range : 10 μsec/div.

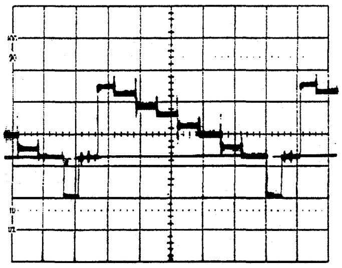


(2) For PAL color-bar signal input

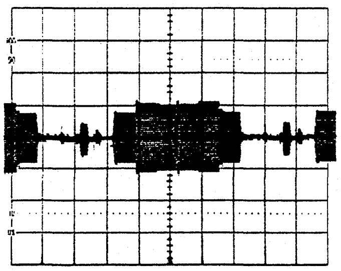
④ **TP-Y/COMP (TP-351)**
V range : 0.5V/div.
H range : 10 μsec/div.



⑤ **TP-Y (TP-368)**
V range : 0.5V/div.
H range : 10 μsec/div.

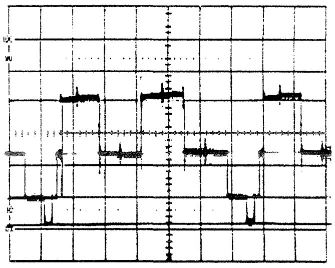


⑥ **TP-C IN (TP-352)**
V range : 0.2V/div.
H range : 10 μsec/div.

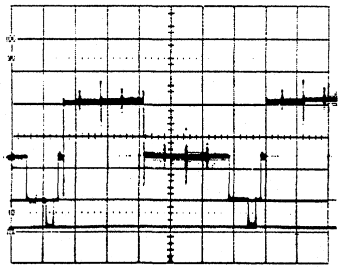


⑦

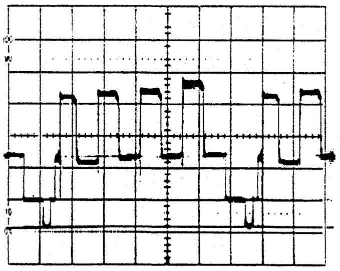
⑧ **TP-R (TP-375)**
V range : 1V/div.
H range : 10 μsec/div.



⑨ **TP-G (TP-(373)**
V range : 1V/div.
H range : 10 μsec/div.



⑩ **TP-B (TP-374)**
V range : 1V/div.
H range : 10 μsec/div.



⑪—⑭

- The waveforms ⑪ to⑭ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

⑮—⑲

- The waveforms ⑮ to⑲ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

⑳ , ㉑—1

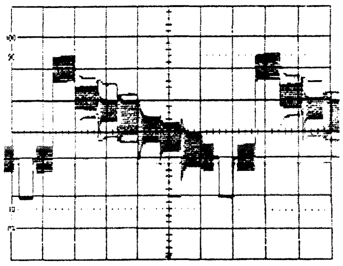
- The waveforms ⑳ to ㉑-1 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

㉑— 2

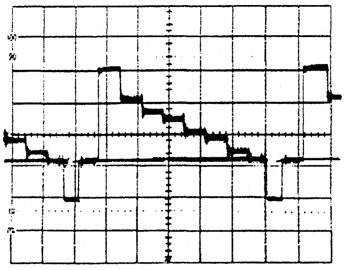
- The waveforms ㉑ -2 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

(3) For SECAM color-bar signal input

④ **TP-Y/COMP (TP-351)**
V range : 0.5V/div.
H range : 10 μsec/div.

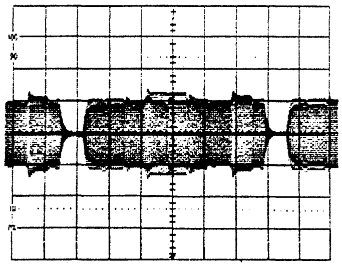


⑤ **TP-Y(TP-368)**
V range : 0.5V/div.
H range : 10 μsec/div.

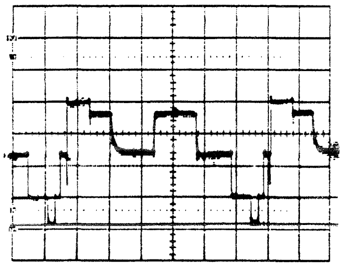


⑥

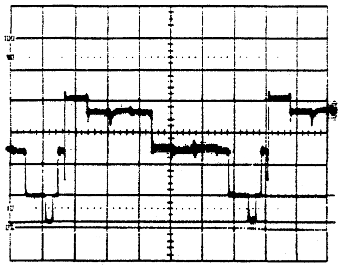
⑦ **IC356 pin 18 (SECAM IN)**
V range : 0.2V/div.
H range : 10 μsec/div.



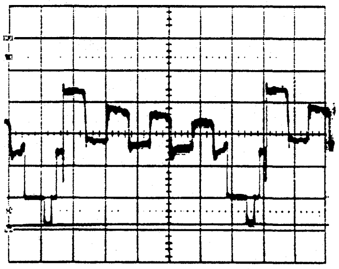
⑧ **TP-R (TP-375)**
V range : 1V/div.
H range : 10 μsec/div.



⑨ **TP-G (TP-373)**
V range : 1V/div.
H range : 10 μsec/div.



⑩ **TP-B (TP-374)**
V range : 1V/div.
H range : 10 μsec/div.



⑪—⑭

- The waveforms ⑪ to ⑭ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

⑮—⑲

- The waveforms ⑮ to ⑲ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

⑳ , ㉑−1

- The waveforms ⑳ to ㉑−1 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

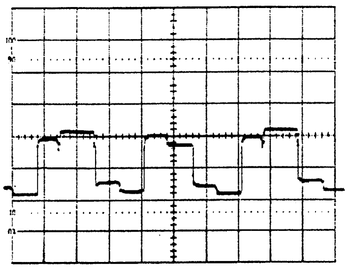
㉑− 2

- The waveforms ㉑ −2 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

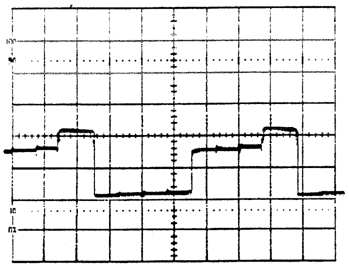
- **R CRT assembly, G CRT assembly, B CRT assemly**

(1) For NTSC/NTSC 4.43 color-bar signal input

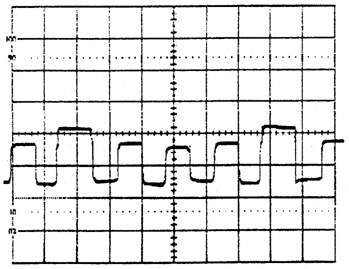
㉒ **R–cathode**
V range : 50V/div.
H range : 10 μsec/div.



㉓ **G–cathode**
V range : 50V/div.
H range : 10 μsec/div.

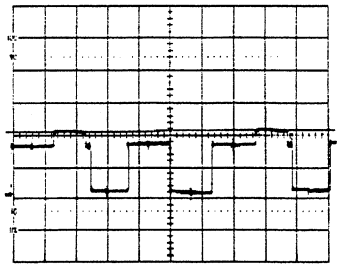


㉔ **B–cathode**
V range : 50V/div.
H range : 10 μsec/div.

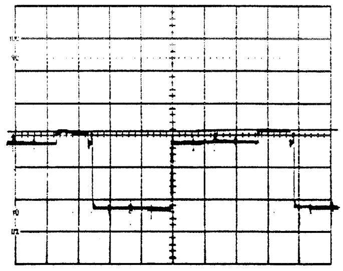


(2) For PAL color-bar signal input

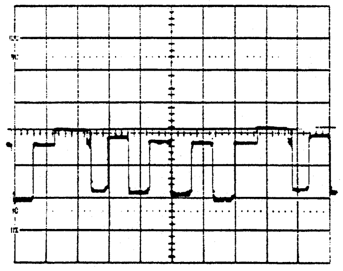
㉒ **R–cathode**
V range : 50V/div.
H range : 10 μsec/div.



㉓ **G–cathode**
V range : 50V/div.
H range : 10 μsec/div.

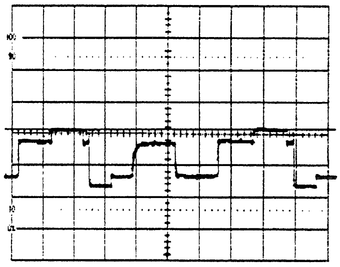


㉔ **B–cathode**
V range : 50V/div.
H range : 10 μsec/div.

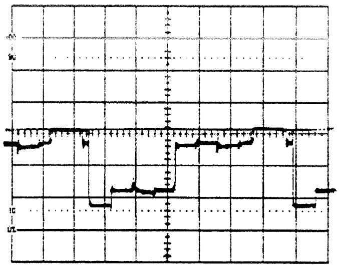


(3) For SECAM color-bar signal input

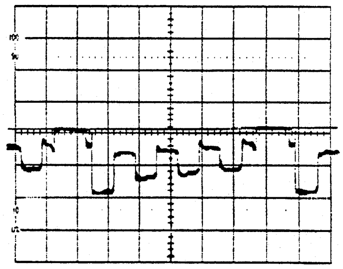
㉒ **R–cathode**
V range : 50V/div.
H range : 10 μsec/div.



㉓ **G–cathode**
V range : 50V/div.
H range : 10 μsec/div.



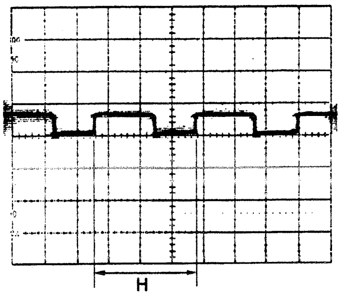
㉔ **B–cathode**
V range : 50V/div.
H range : 10 μsec/div.



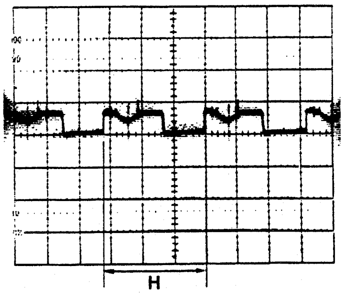
- **POWER SUPPLY–DEFLECTION assembly**

- The waveforms ㉕ to ㉞ are input for the PAL color-bar signal.
  These waveforms are the same as those obtained with an NTSC/NTSC4.43 color bar signal input, except the V and H values which are different as shown in Table 1.

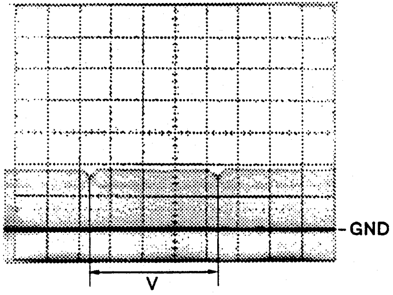
㉕ **Q571 base**
V range : 1V/div.
H range : 20 μsec/div.



㉖ **Q561 base**
V range : 1V/div.
H range : 20 μsec/div.

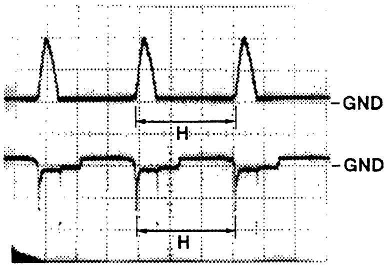


㉗ **Q573 collector**
V range : 500V/div.
H range : 5msec/div.

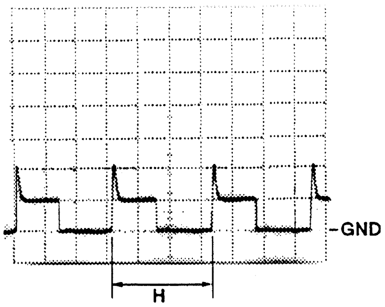


㉗ **Upper : Q573 collector**
V range : 500V/div.
H range : 20 μsec/div.

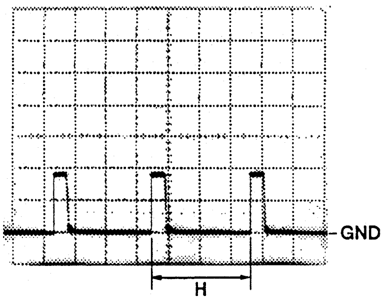
㉘ **Lower : Q573 base**
V range : 5V/div.
H range : 20 μsec/div.



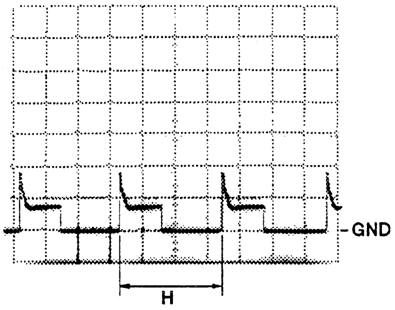
㉙ **Q571 collector**
V range : 50V/div.
H range : 20 μsec/div.



㉚ **Q574 emitter**
V range : 10V/div.
H range : 20 μsec/div.

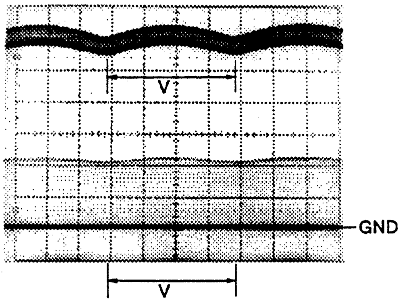


㉛ **Q561 collector**
V range : 50V/div.
H range : 20 μsec/div.



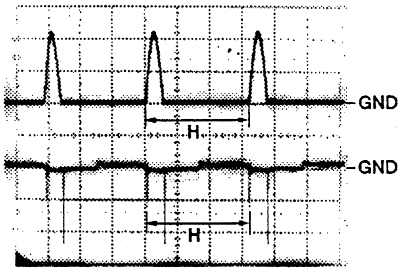
㉜ **Upper : Q562 emitter**
V range : 20V/div.
H range : 5msec/div.

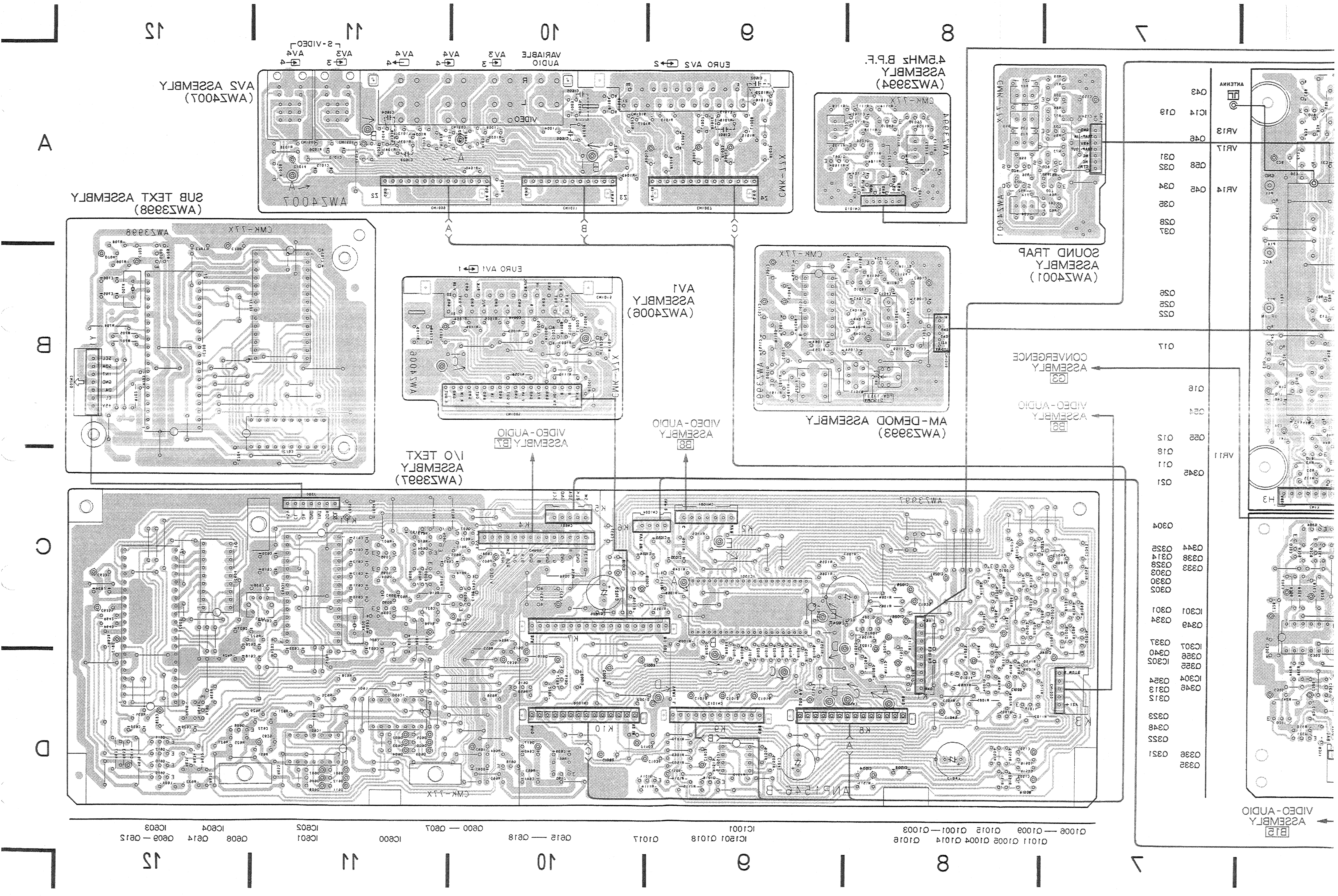
㉝ **Lower : Q563 collector**
V range : 500V/div.
H range : 5msec/div.



㉝ **Upper : Q563 collector**
V range : 500V/div.
H range : 20 μsec/div.

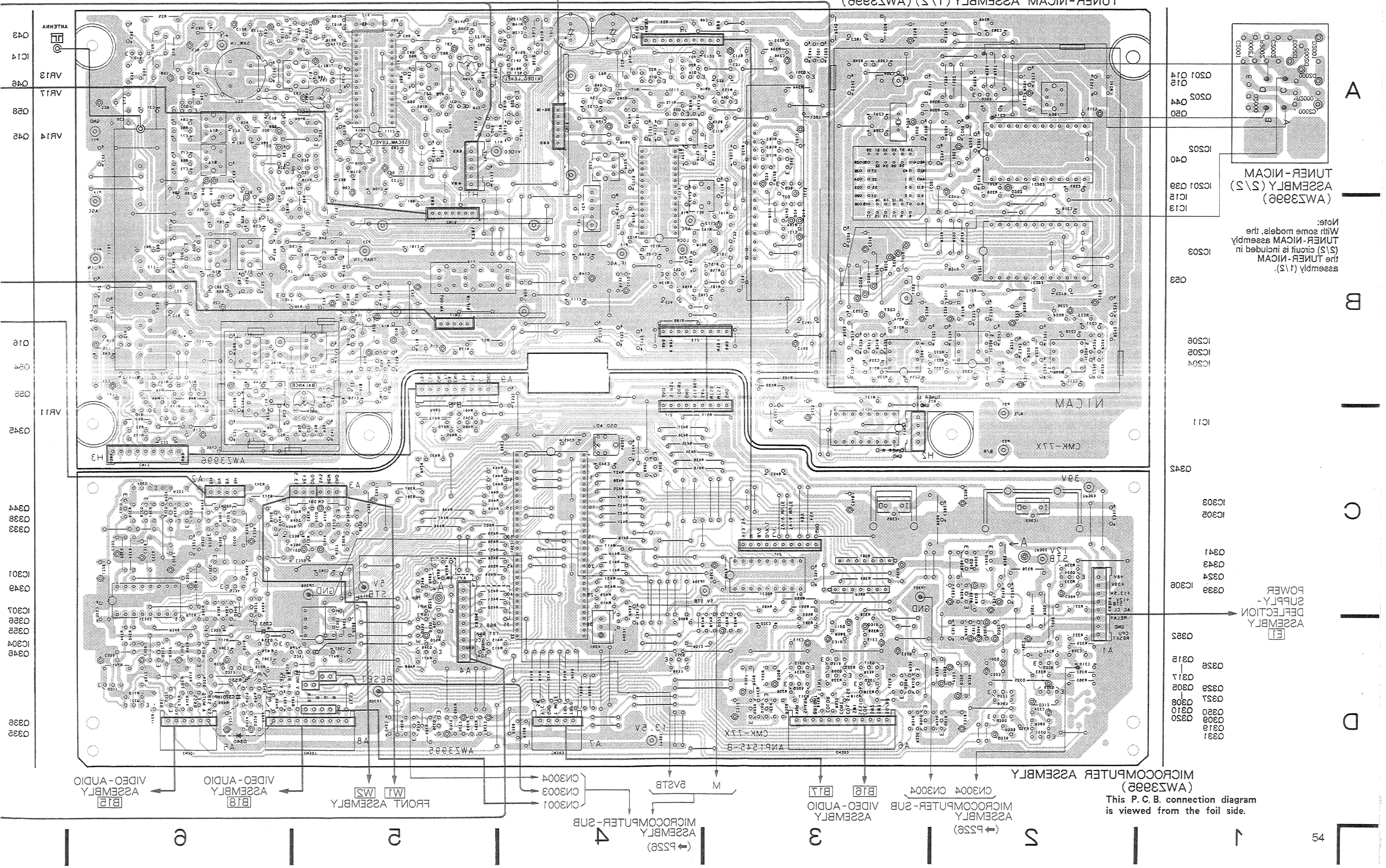
㉞ **Lower : Q563 base**
V range : 10V/div.
H range : 20 μsec/div.




12
11
10
9
8
7
A
B
C
D
AV2 ASSEMBLY (AWZ4007)
S-VIDEO
AV4 4
AV3 3
AV4 4
AV4 4
AV3 3
VARIABLE AUDIO
EURO AV2 2
4.5MHz B.P.F. ASSEMBLY (AWZ3994)
SOUND TRAP ASSEMBLY (AWZ4001)
ANTENNA
AGC
SUB TEXT ASSEMBLY (AWZ3998)
AV1 ASSEMBLY (AWZ4006)
EURO AV1 1
AM-DEMOD ASSEMBLY (AWZ3993)
CONVERGENCE ASSEMBLY G3
VIDEO-AUDIO ASSEMBLY B6
VIDEO-AUDIO ASSEMBLY B7
VIDEO-AUDIO ASSEMBLY B8
VIDEO-AUDIO ASSEMBLY B15
I/O TEXT ASSEMBLY (AWZ3997)
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
H3
Q43
IC14 Q19
Q46
VR13
VR17
Q31 Q32
Q58
Q34 Q45 VR14
Q35
Q28 Q37
Q26 Q25 Q22
Q17
Q16
Q54
Q12 Q55
Q18
Q11 Q345
Q21
VR11
Q304
Q325 Q314 Q328 Q303 Q330 Q302
Q344 Q338 Q333
Q301 Q334
IC301 Q349
Q337 Q340 IC302
IC307 Q356 Q355
Q354 Q313 Q312
IC304 Q346
Q323 Q348 Q322
Q321
Q336 Q335
IC603 Q609 — Q612
IC604 Q614
Q608
IC602 IC601
IC600
Q600 — Q607
Q615 — Q618
IC1001 IC1501 Q1018
Q1017
Q1006 — Q1009 Q1015 Q1001 — Q1003
Q1011 Q1005 Q1004 Q1014 Q1016

5.10 P. C. BOARDS PATTERN

TUNER-NICAM ASSEMBLY (1/2) (AWZ3996)

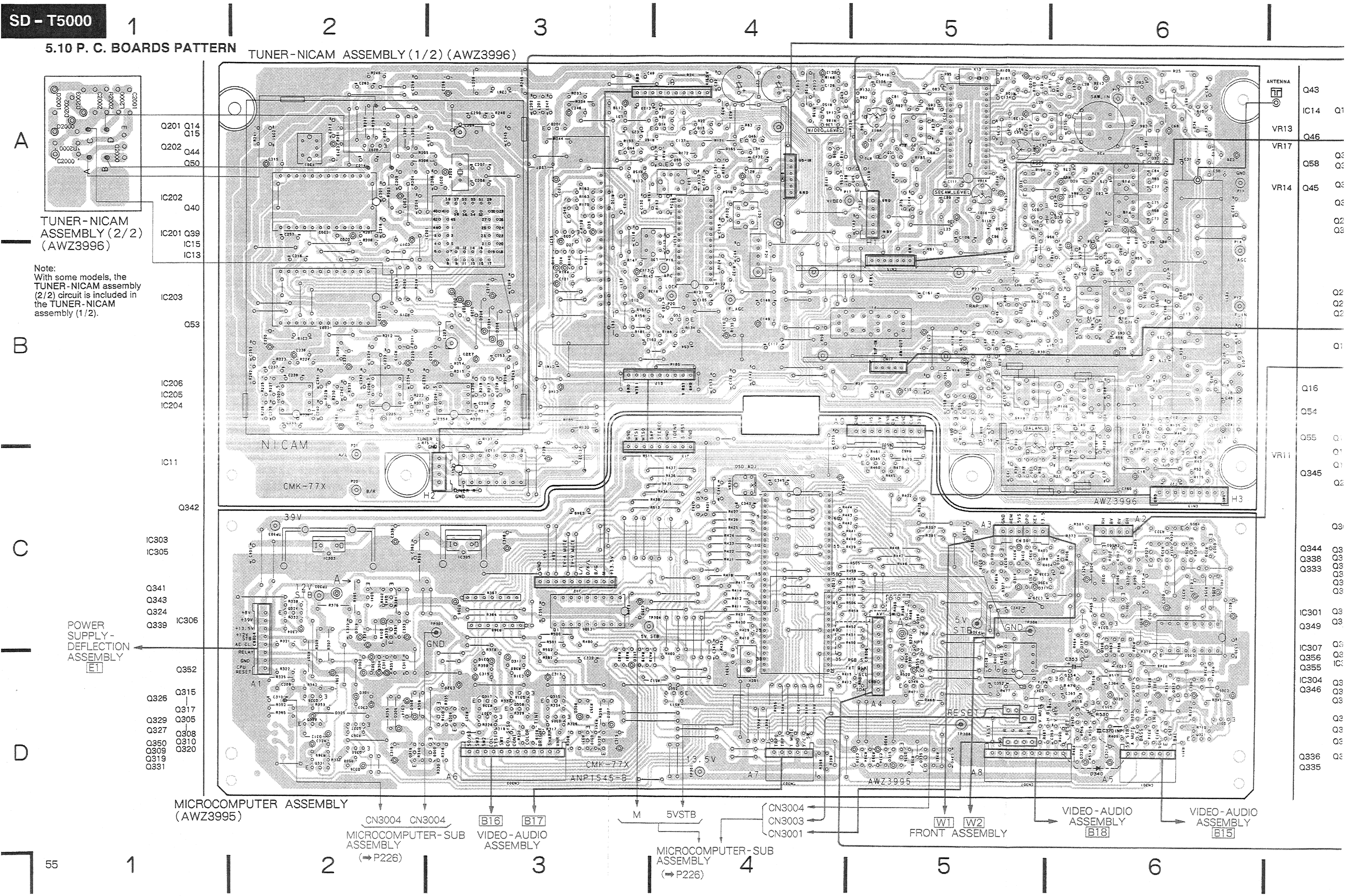

6
5
4
3
2
1
A
B
C
D
ANTENNA
Q43
IC14
VR13
Q46
VR17
Q58
VR14
Q45
Q16
Q54
Q55
VR11
Q345
Q344
Q338
Q333
IC301
Q349
IC307
Q356
Q355
IC304
Q346
Q336
Q335
Q201 Q14
Q15
Q202
Q44
Q50
IC202
Q40
IC201 Q39
IC15
IC13
IC203
Q53
IC206
IC205
IC204
IC11
Q342
IC303
IC305
Q341
Q343
Q324
IC306
Q339
Q352
Q315
Q317
Q305
Q308
Q310
Q320
Q326
Q329
Q327
Q330
Q309
Q319
Q331
TUNER-NICAM ASSEMBLY (2/2) (AWZ3996)
NICAM
CMK-77X
AWZ3996
H3
H2
AWZ3995
ANP1545-B
GND
5V STB
12V STB
13.5V
39V
RESET
POWER SUPPLY-DEFLECTION ASSEMBLY
E1
VIDEO-AUDIO ASSEMBLY
B15
VIDEO-AUDIO ASSEMBLY
B18
W2
W1
FRONT ASSEMBLY
CN3004
CN3003
CN3001
MICROCOMPUTER-SUB ASSEMBLY
(➡P226)
5VSTB
M
B17
B16
VIDEO-AUDIO ASSEMBLY
CN3004 CN3004
MICROCOMPUTER-SUB ASSEMBLY
(➡P226)

Note:
With some models, the TUNER-NICAM assembly (2/2) circuit is included in the TUNER-NICAM assembly (1/2).

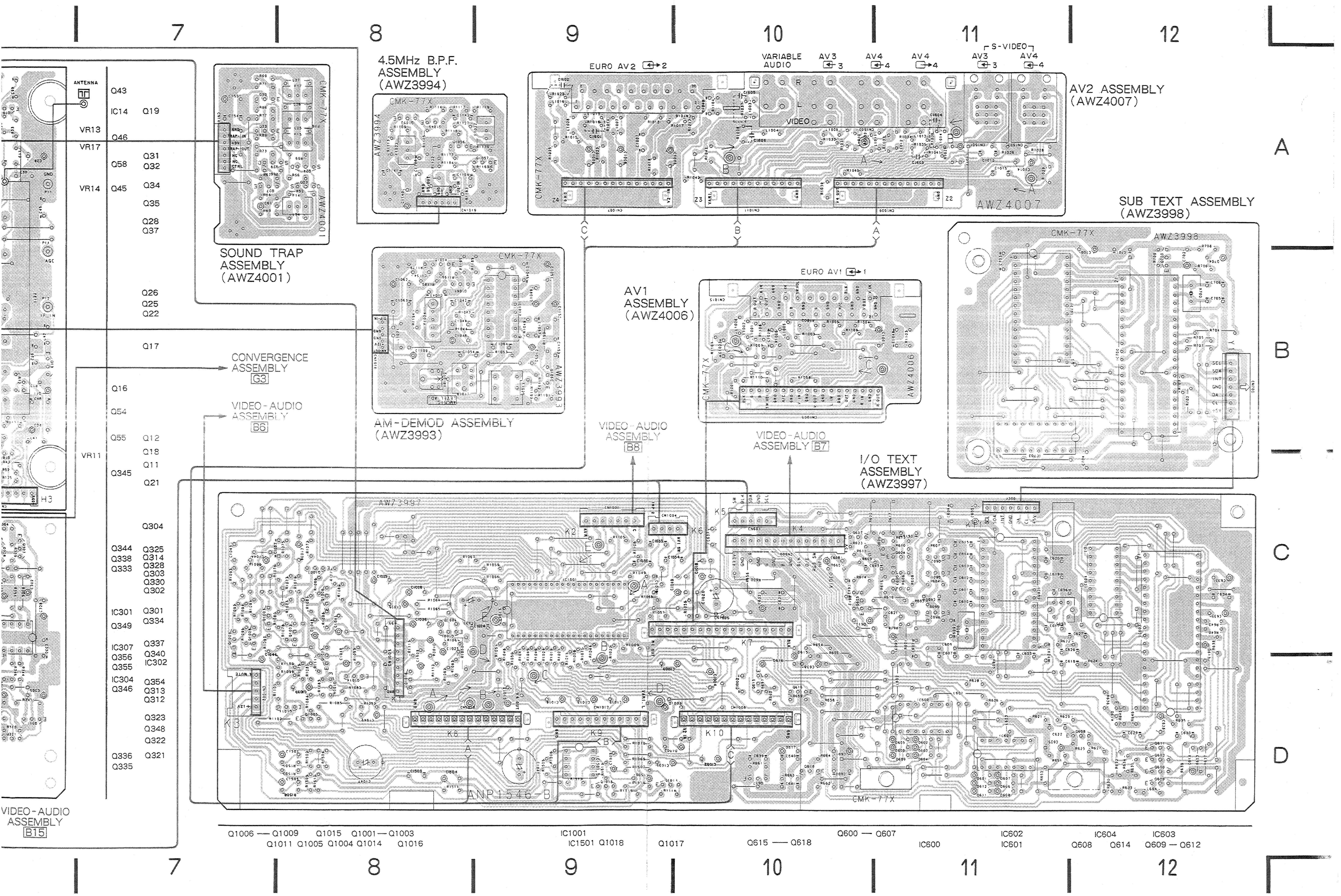
MICROCOMPUTER ASSEMBLY (AWZ3995)

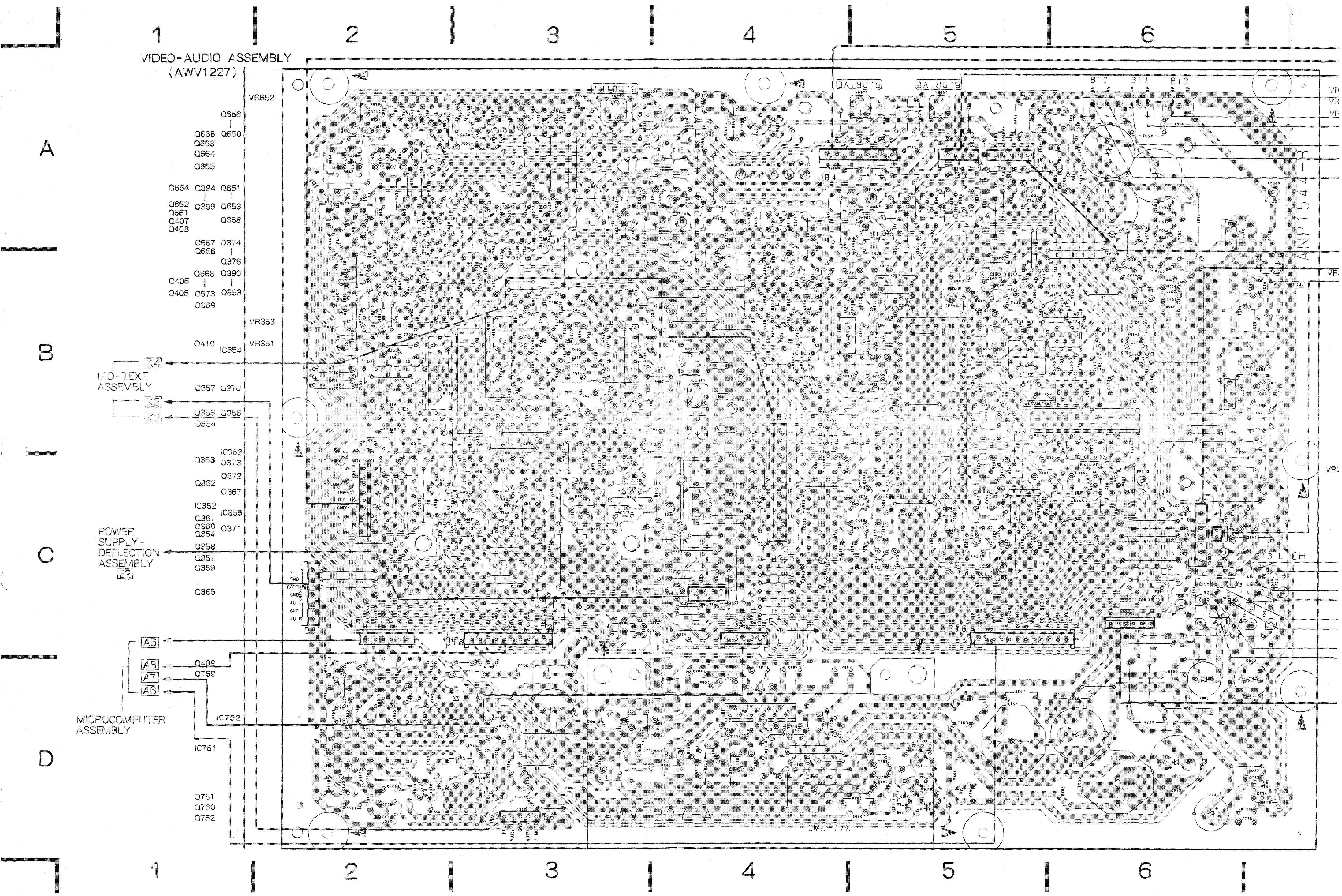
This P. C. B. connection diagram is viewed from the foil side.

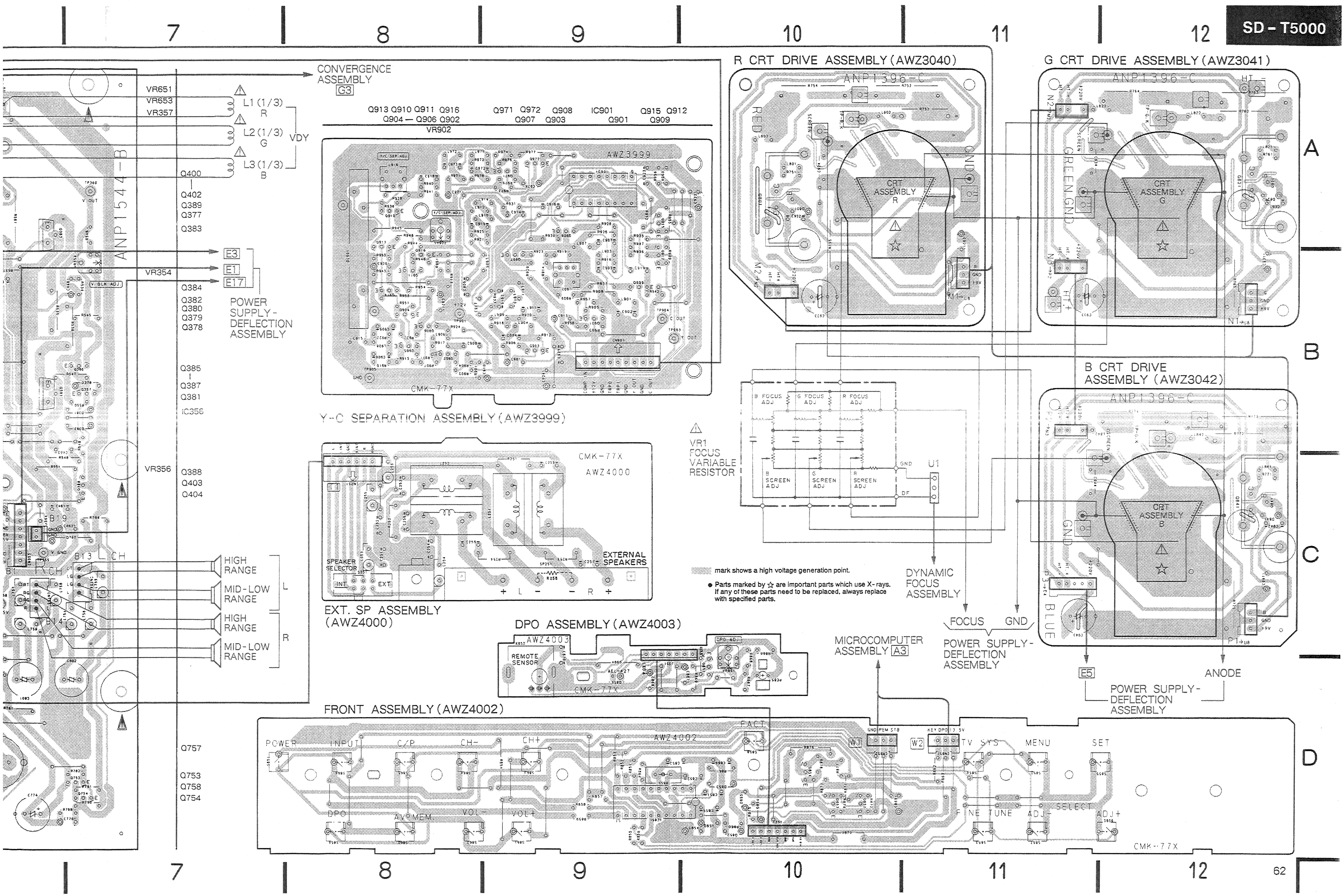
5.10 P. C. BOARDS PATTERN


1
2
3
4
5
6
A
B
C
D
TUNER-NICAM ASSEMBLY (1/2) (AWZ3996)
TUNER-NICAM ASSEMBLY (2/2) (AWZ3996)
Q201 Q14
Q15
Q202 Q44
Q50
IC202
Q40
IC201 Q39
IC15
IC13
IC203
Q53
IC206
IC205
IC204
IC11
Q342
IC303
IC305
Q341
Q343
Q324
Q339
IC306
Q352
Q326
Q315
Q317
Q329 Q305
Q327
Q308
Q350 Q310
Q309 Q320
Q319
Q331
N I C A M
CMK-77X
H2
H3
AWZ3996
39V
12V STB
5V STB
GND
RESET
13.5V
CMK-77X
ANP1545-B
AWZ3995
A1
A2
A3
A4
A5
A6
A7
A8
ANTENNA
Q43
IC14
VR13
Q46
VR17
Q58
VR14
Q45
Q16
Q54
Q55
VR11
Q345
Q344
Q338
Q333
IC301
Q349
IC307
Q356
Q355
IC304
Q346
Q336
Q335
POWER SUPPLY-DEFLECTION ASSEMBLY
E1
MICROCOMPUTER ASSEMBLY (AWZ3995)
CN3004 CN3004
MICROCOMPUTER-SUB ASSEMBLY (➡P226)
B16 B17
VIDEO-AUDIO ASSEMBLY
M
5VSTB
CN3004
CN3003
CN3001
MICROCOMPUTER-SUB ASSEMBLY (➡P226)
W1 W2
FRONT ASSEMBLY
VIDEO-AUDIO ASSEMBLY
B18
VIDEO-AUDIO ASSEMBLY
B15

Note:
With some models, the **TUNER-NICAM** assembly (2/2) circuit is included in the **TUNER-NICAM** assembly (1/2).


7
8
9
10
11
12
A
B
C
D
4.5MHz B.P.F. ASSEMBLY (AWZ3994)
EURO AV2 ⇦2
VARIABLE AUDIO
AV3 ⇦3
AV4 ⇦4
AV4 ⇨4
S-VIDEO
AV3 ⇦3
AV4 ⇦4
AV2 ASSEMBLY (AWZ4007)
ANTENNA
SOUND TRAP ASSEMBLY (AWZ4001)
AM-DEMOD ASSEMBLY (AWZ3993)
AV1 ASSEMBLY (AWZ4006)
EURO AV1 ⇦1
SUB TEXT ASSEMBLY (AWZ3998)
CONVERGENCE ASSEMBLY G3
VIDEO-AUDIO ASSEMBLY B6
VIDEO-AUDIO ASSEMBLY B8
VIDEO-AUDIO ASSEMBLY B7
I/O TEXT ASSEMBLY (AWZ3997)
VIDEO-AUDIO ASSEMBLY B15
CMK-77X
AWZ3994
AWZ4001
AWZ4007
AWZ3993
AWZ4006
AWZ3998
AWZ3997
ANP1546-B
Q43
IC14
Q19
VR13
Q46
VR17
Q31
Q58
Q32
VR14
Q45
Q34
Q35
Q28
Q37
Q26
Q25
Q22
Q17
Q16
Q54
Q55
Q12
Q18
VR11
Q11
Q345
Q21
Q304
Q344
Q325
Q338
Q314
Q333
Q328
Q303
Q330
Q302
IC301
Q301
Q349
Q334
IC307
Q337
Q356
Q340
Q355
IC302
IC304
Q354
Q346
Q313
Q312
Q323
Q348
Q322
Q336
Q321
Q335
H3
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
Z2
Z3
Z4
Q1006 — Q1009
Q1015
Q1001 — Q1003
Q1011
Q1005
Q1004
Q1014
Q1016
IC1001
IC1501
Q1018
Q1017
Q615 — Q618
Q600 — Q607
IC600
IC602
IC601
IC604
Q608
Q614
IC603
Q609 — Q612

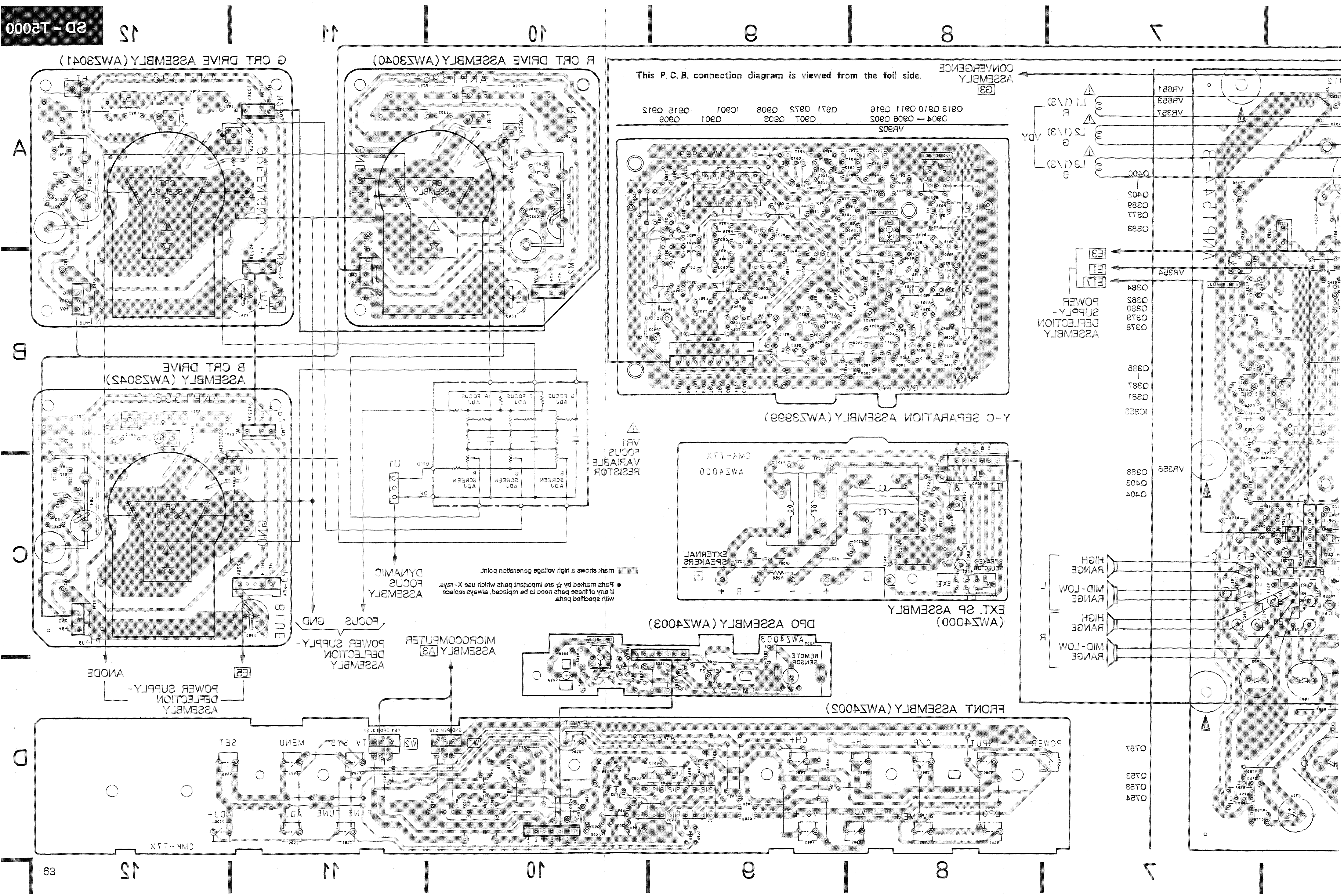

1
2
3
4
5
6
A
B
C
D
VIDEO-AUDIO ASSEMBLY
(AWV1227)
VR652
Q656
Q665 Q660
Q663
Q664
Q655
Q654 Q394 Q651
Q662 Q399 Q653
Q661
Q407
Q408
Q368
Q667 Q374
Q666
Q376
Q668 Q390
Q406
Q405 Q673 Q393
Q369
VR353
VR351
Q410 IC354
I/O-TEXT
ASSEMBLY
K4
K2
K3
Q357 Q370
Q356 Q366
Q354
IC353
Q363 Q373
Q372
Q362
Q367
IC352 IC355
Q361
Q360 Q371
Q364
POWER
SUPPLY-
DEFLECTION
ASSEMBLY
E2
Q358
Q351
Q359
Q365
A5
A8
A7
A6
Q409
Q759
MICROCOMPUTER
ASSEMBLY
IC752
IC751
Q751
Q760
Q752
R. DRIVE
B. DRIVE
V. SIZE
B. OBIKI
B10
B11
B12
B4
B5
B3
B7
B2
B8
B15
B9
B17
B16
B14
B13 L CH
R CH
B19
B6
ANP1544-B
AWV1227-A
CMK-77X
V. OUT
H. DRIVE
S. CL
12V
VTC 50
MTC
VSC 60
C. BLK
BELL FIL. ADJ
SECAM REF
PAL ADJ
B-Y DET
R-Y DET
C. IN
V. BLK ADJ
V. RAMP
GND
50/60
13.5V
Y. IN
VIDEO
RGB SW
H. BLK
ODD/EVEN
BALANCE
VOLUME
TREBLE
BASS
A. MUTE
RESET
V. MUTE
VAR
SHARP
BRITE
TINT
COLOR
CONTRA
Y/COMP
AU. L
AU. R


7
8
9
10
11
12
A
B
C
D
CONVERGENCE ASSEMBLY G3
VR651
VR653
VR357
L1 (1/3) R
L2 (1/3) G
L3 (1/3) B
VDY
ANP1544-B
Q400
Q402
Q389
Q377
Q383
E3
E1
E17
VR354
POWER SUPPLY-DEFLECTION ASSEMBLY
Q384
Q382
Q380
Q379
Q378
Q385
Q387
Q381
IC356
VR356
Q388
Q403
Q404
B19
B13
L CH
R CH
B14
HIGH RANGE
MID-LOW RANGE
HIGH RANGE
MID-LOW RANGE
L
R
Q757
Q753
Q758
Q754
Q913 Q910 Q911 Q916
Q904 — Q906 Q902
VR902
Q971 Q972 Q908
Q907 Q903
IC901
Q901
Q915 Q912
Q909
AWZ3999
CMK-77X
Y-C SEPARATION ASSEMBLY (AWZ3999)
CMK-77X
AWZ4000
EXTERNAL SPEAKERS
SPEAKER SELECTOR
INT
EXT
+ L − − R +
EXT. SP ASSEMBLY (AWZ4000)
DPO ASSEMBLY (AWZ4003)
AWZ4003
REMOTE SENSOR
DPO ADJ
CMK-77X
R CRT DRIVE ASSEMBLY (AWZ3040)
ANP1396-C
RED
SCREEN
CRT ASSEMBLY R
GND
M2
M1
G CRT DRIVE ASSEMBLY (AWZ3041)
ANP1396-C
GREEN
SCREEN
CRT ASSEMBLY G
GND
N2
N1
HT
B CRT DRIVE ASSEMBLY (AWZ3042)
ANP1396-C
CRT ASSEMBLY B
GND
BLUE
P3
P1
VR1 FOCUS VARIABLE RESISTOR
B FOCUS ADJ
G FOCUS ADJ
R FOCUS ADJ
B SCREEN ADJ
G SCREEN ADJ
R SCREEN ADJ
GND
DF
U1
DYNAMIC FOCUS ASSEMBLY
FOCUS
GND
POWER SUPPLY-DEFLECTION ASSEMBLY
MICROCOMPUTER ASSEMBLY A3
E5
ANODE
POWER SUPPLY-DEFLECTION ASSEMBLY
FRONT ASSEMBLY (AWZ4002)
AWZ4002
POWER
INPUT
C/P
CH−
CH+
FACT
W1
W2
TV SYS
MENU
SET
DPO
AV MEM.
VOL−
VOL+
FINE TUNE
ADJ−
SELECT
ADJ+
CMK-77X

▨ mark shows a high voltage generation point.

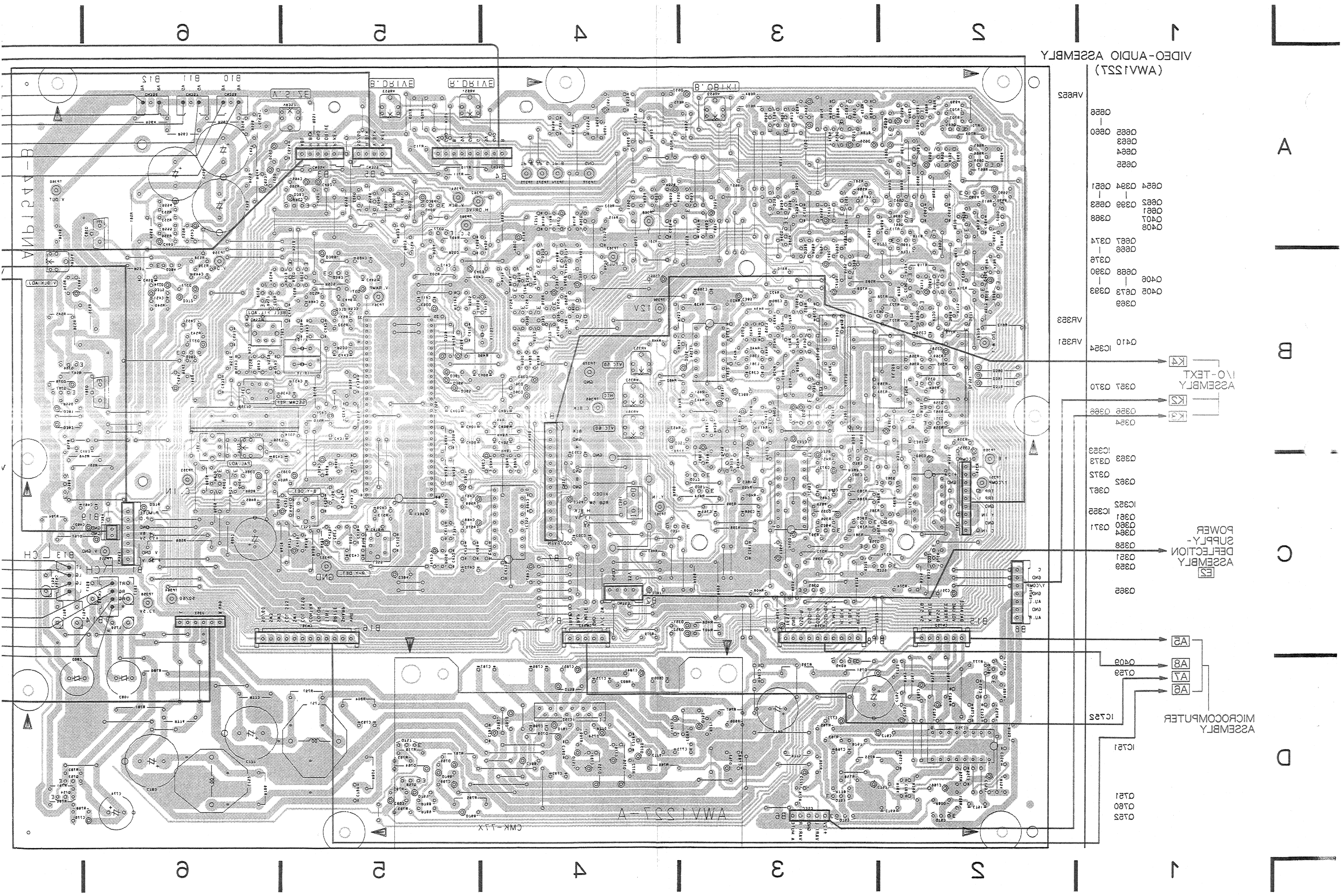
- Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.

This P. C. B. connection diagram is viewed from the foil side.


SD - T5000
12
11
10
9
8
7
A
B
C
D
G CRT DRIVE ASSEMBLY (AWZ3041)
R CRT DRIVE ASSEMBLY (AWZ3040)
B CRT DRIVE ASSEMBLY (AWZ3042)
ANP1396-C
CRT ASSEMBLY G
CRT ASSEMBLY R
CRT ASSEMBLY B
GREEN
RED
BLUE
GND
SCREEN
VR1 FOCUS VARIABLE RESISTOR
R FOCUS ADJ
G FOCUS ADJ
B FOCUS ADJ
R SCREEN ADJ
G SCREEN ADJ
B SCREEN ADJ
U1
DYNAMIC FOCUS ASSEMBLY
FOCUS
GND
POWER SUPPLY-DEFLECTION ASSEMBLY
ANODE
E5
MICROCOMPUTER ASSEMBLY A3
CONVERGENCE ASSEMBLY G3
Q913 Q910 Q911 Q916
Q904 — Q906 Q902
Q971 Q972 Q908
Q907 Q903
IC901
Q901
Q915 Q912
Q909
VR902
AWZ3999
Y-C SEPARATION ASSEMBLY (AWZ3999)
CMK-77X
AWZ4000
EXTERNAL SPEAKERS
SPEAKER SELECTOR
EXT
INT
EXT. SP ASSEMBLY (AWZ4000)
DPO ASSEMBLY (AWZ4003)
AWZ4003
REMOTE SENSOR
FRONT ASSEMBLY (AWZ4002)
AWZ4002
W1
W2
POWER
INPUT
C/P
CH-
CH+
FACT
SET
MENU
TV SYS
ADJ+
SELECT
ADJ-
FINE TUNE
VOL+
VOL-
AV MEM
DPO
L1 (1/3) R
L2 (1/3) G
L3 (1/3) B
VDY
VR661
VR663
VR357
VR354
VR356
Q400
Q402
Q389
Q377
Q383
E3
E1
E17
POWER SUPPLY-DEFLECTION ASSEMBLY
Q384
Q382
Q380
Q379
Q378
Q385
Q387
Q381
IC356
Q388
Q403
Q404
HIGH RANGE
MID-LOW RANGE
L
R
Q757
Q753
Q758
Q754

■ mark shows a high voltage generation point.

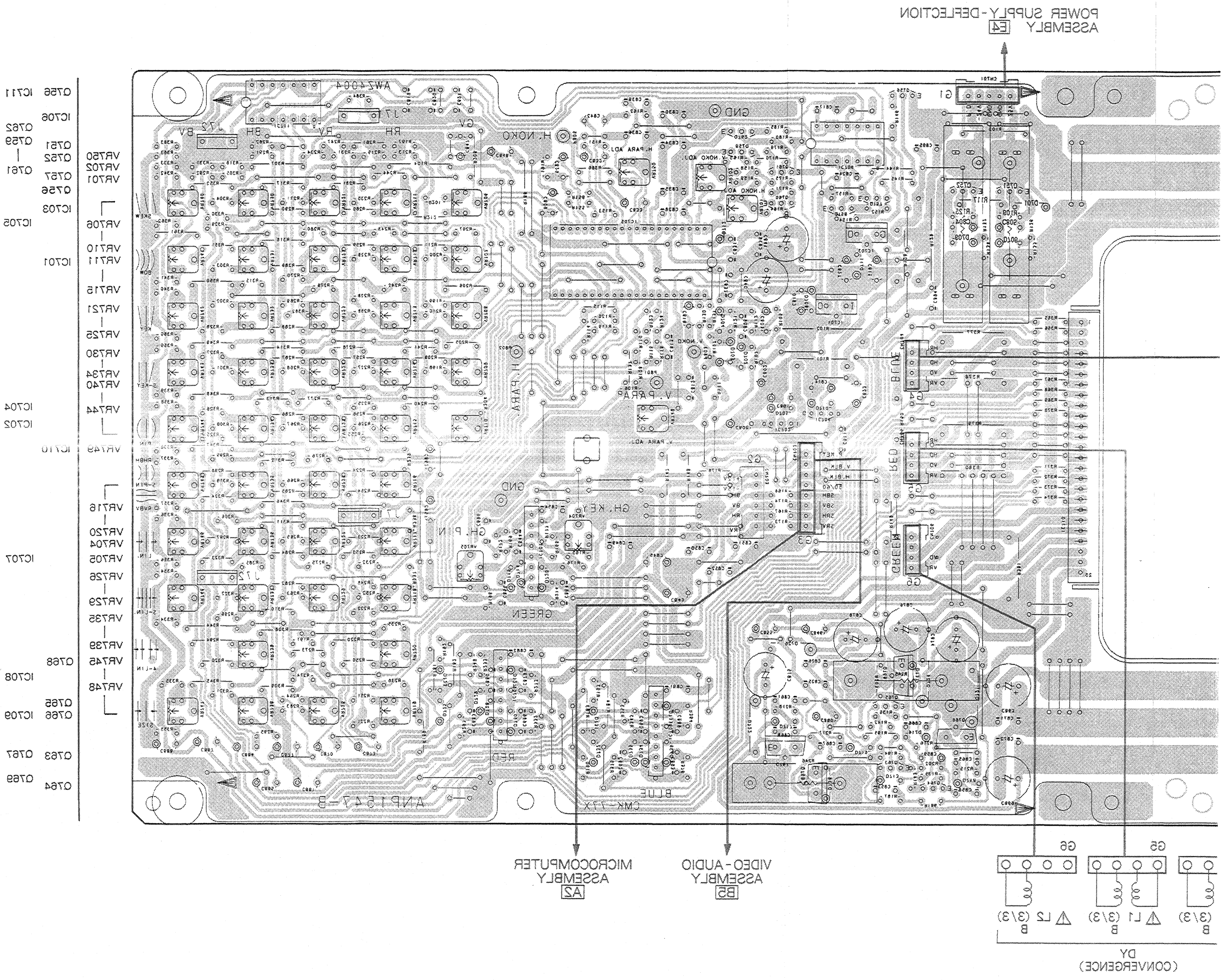
● Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.


VIDEO-AUDIO ASSEMBLY
(AWV1227)
I/O-TEXT ASSEMBLY
K4
K2
K3
POWER SUPPLY-DEFLECTION ASSEMBLY
E2
MICROCOMPUTER ASSEMBLY
A5
A8
A7
A6
AWV1227-A
1
2
3
4
5
6
A
B
C
D

| 9 | 8 | 7 | 6 | 5 | 4 |

A

This P. C. B. connection diagram is viewed from the foil side.

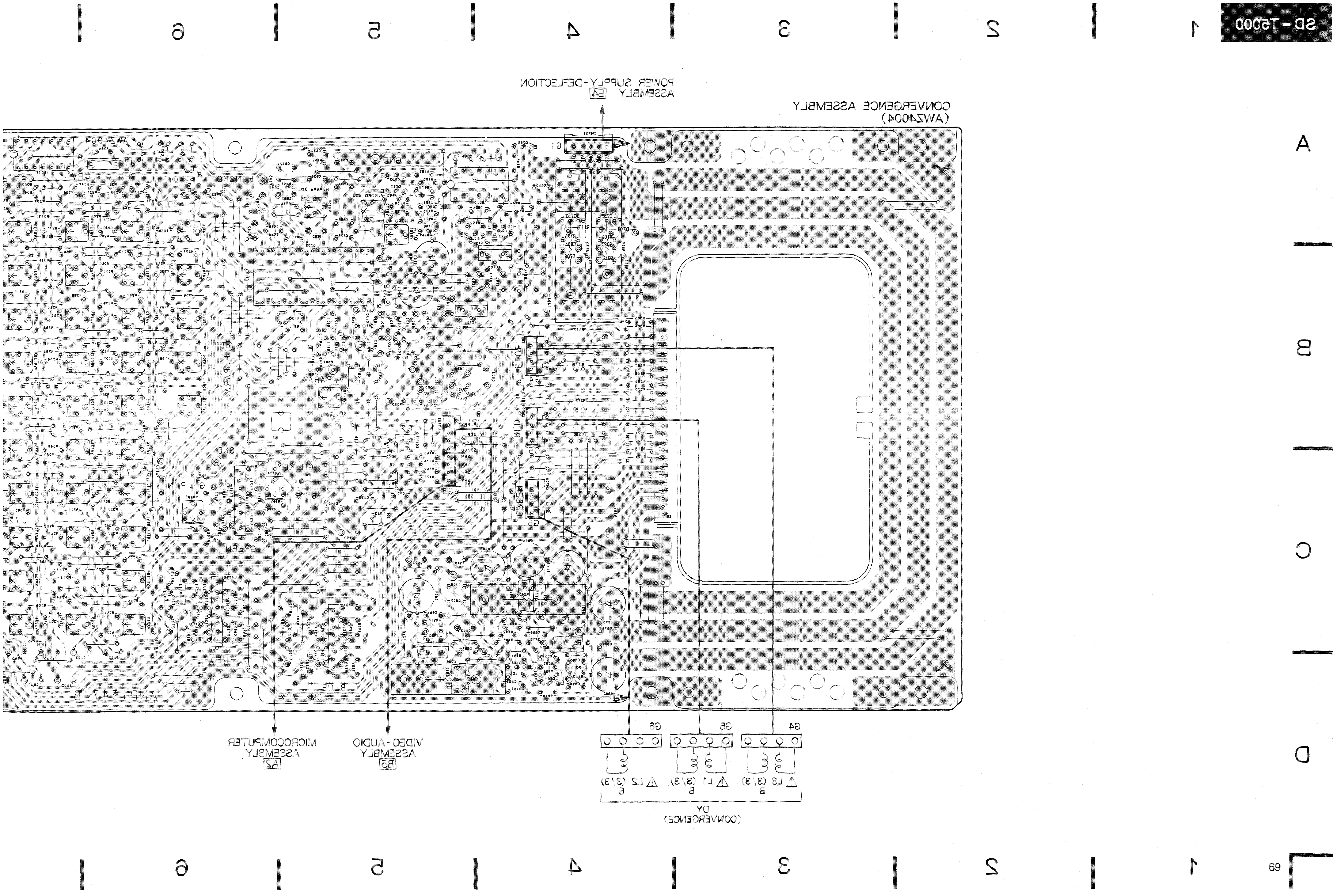

POWER SUPPLY-DEFLECTION ASSEMBLY E4
AWZ4004
ANP1547-B
CMK-77X
G1
G2
G3
G4
G5
G6
BLUE
RED
GREEN
GND
H. NOKO
H. PARA
V. PARA
GH. KEY
GH. PIN
MICROCOMPUTER ASSEMBLY A2
VIDEO-AUDIO ASSEMBLY B5
DY (CONVERGENCE)
B (3/3) L1
B (3/3) L2
VR750
VR702
VR701
VR706
VR710
VR711
VR715
VR721
VR725
VR730
VR734
VR740
VR744
VR749
VR716
VR720
VR704
VR705
VR726
VR729
VR735
VR739
VR745
VR748
IC711
IC706
IC703
IC705
IC701
IC704
IC702
IC710
IC707
IC708
IC709
Q756
Q762
Q759
Q761
Q751
Q752
Q757
Q758
Q768
Q765
Q766
Q763
Q767
Q769
Q764

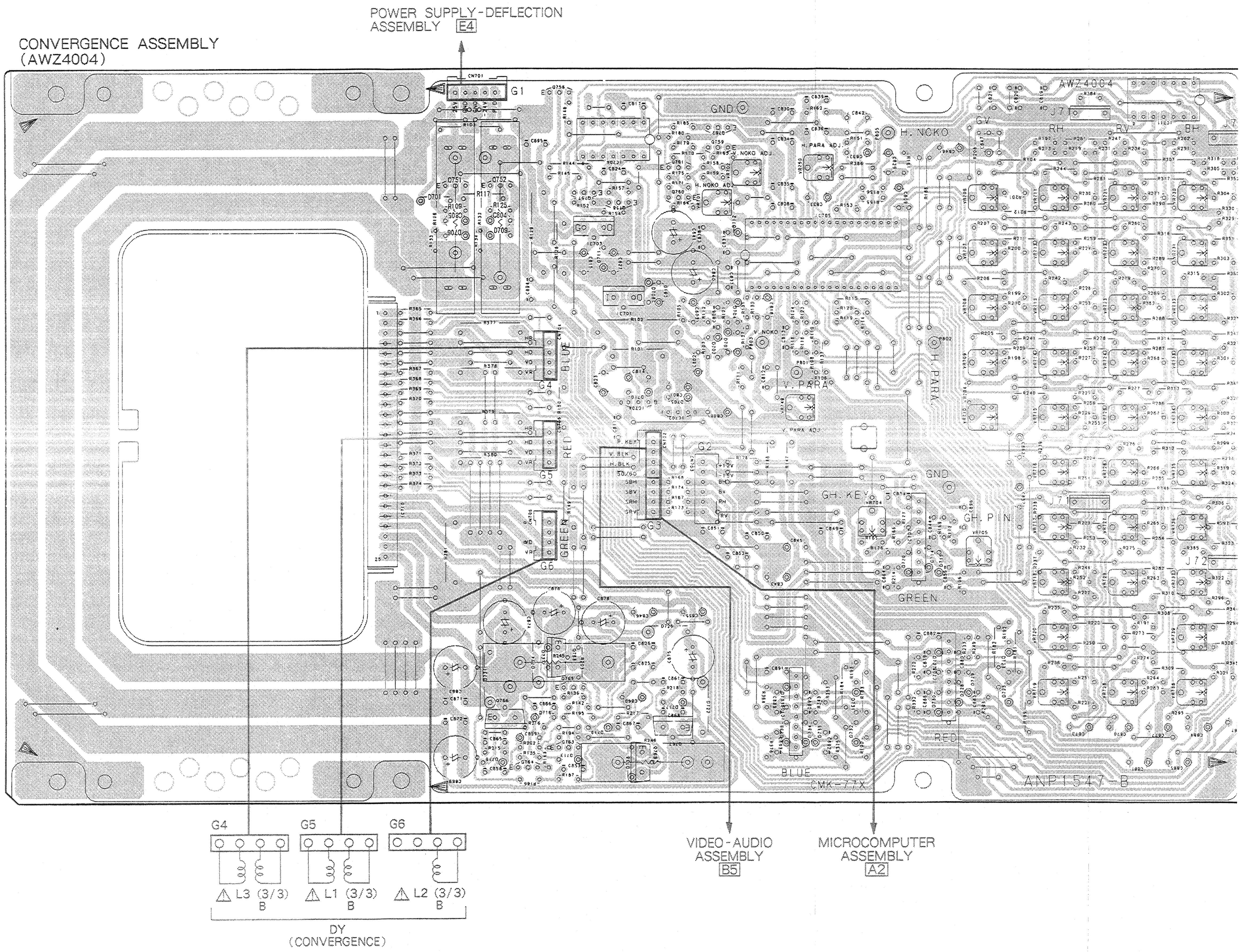
B

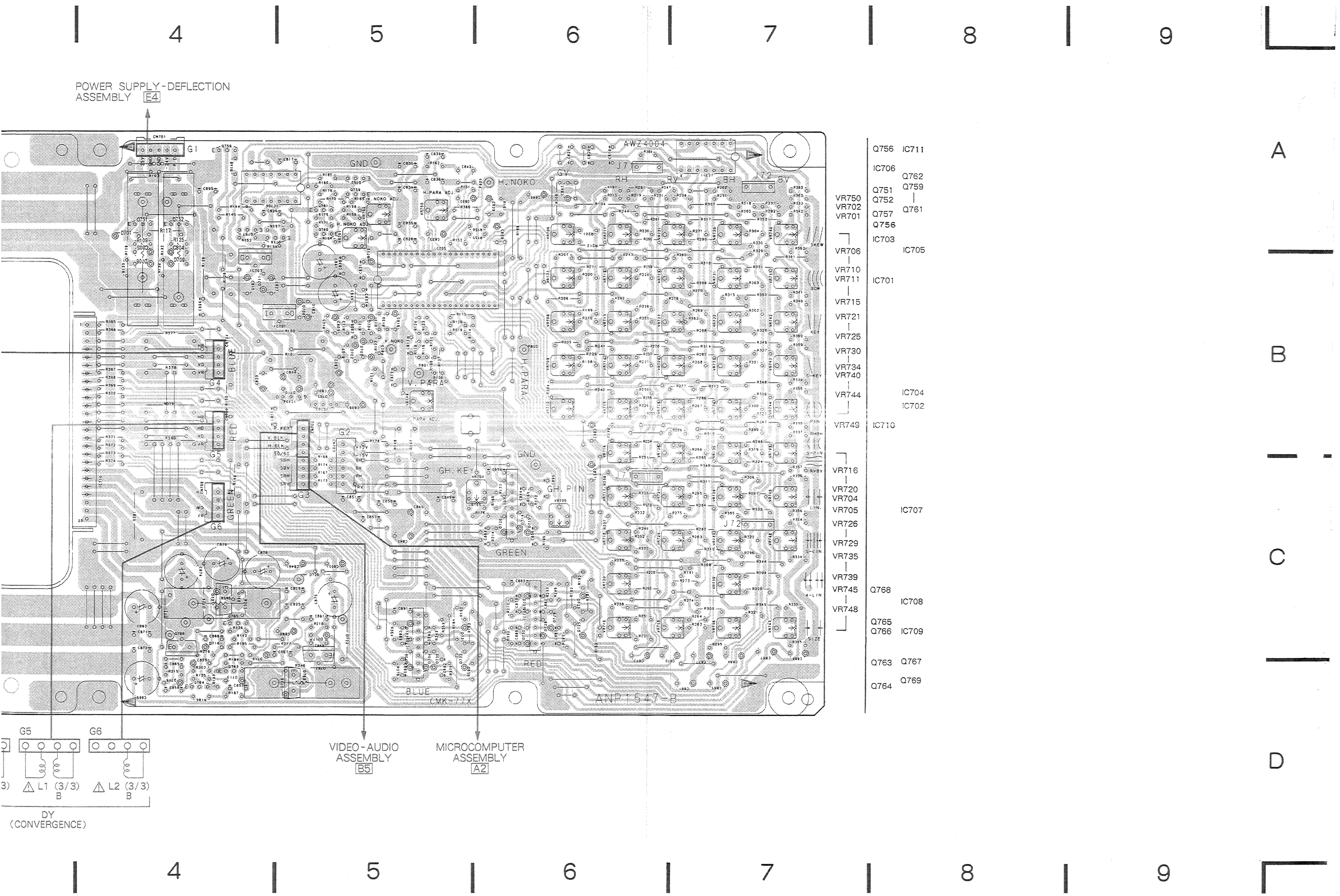
C

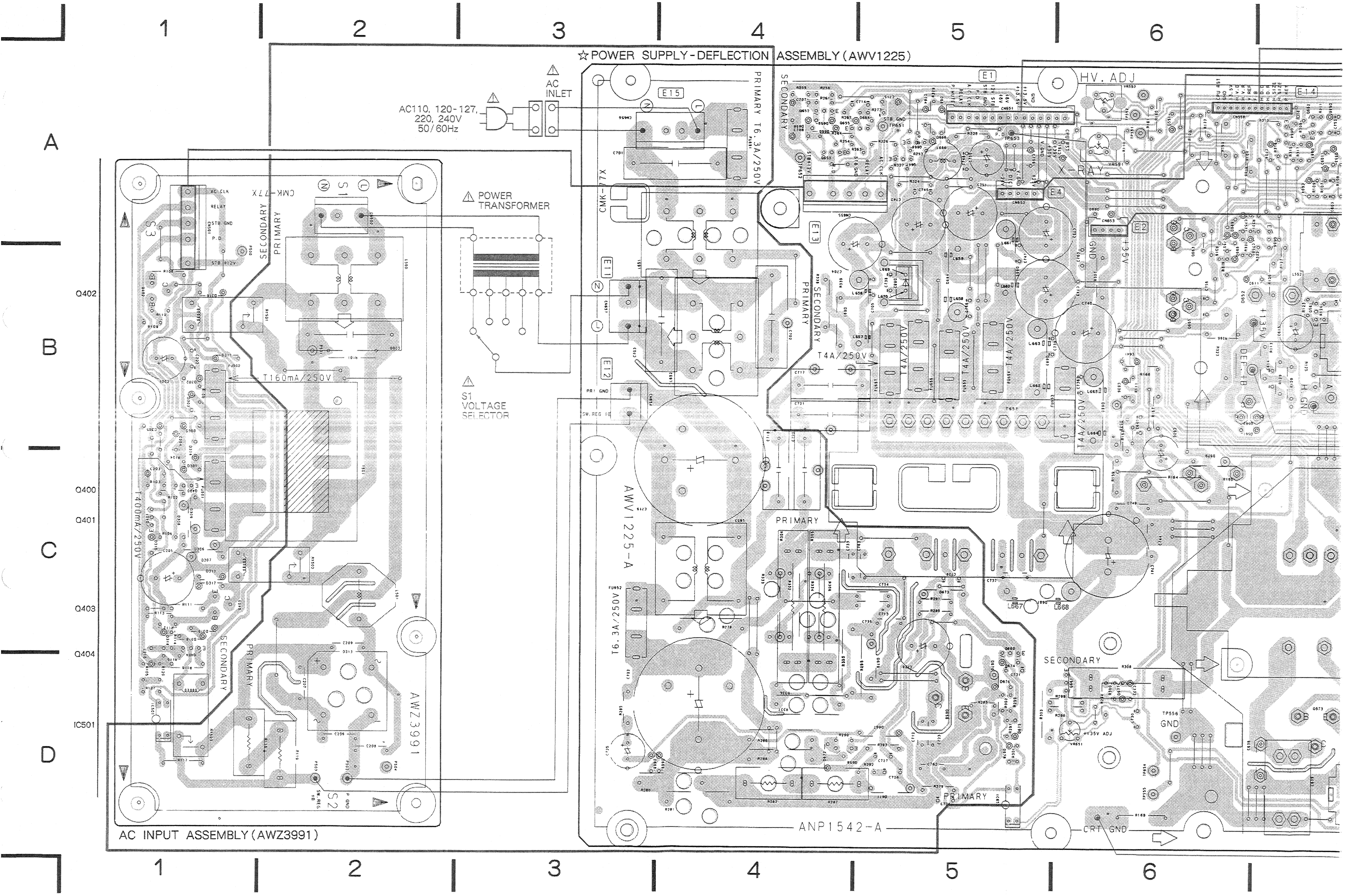
D

| 9 | 8 | 7 | 6 | 5 | 4 |

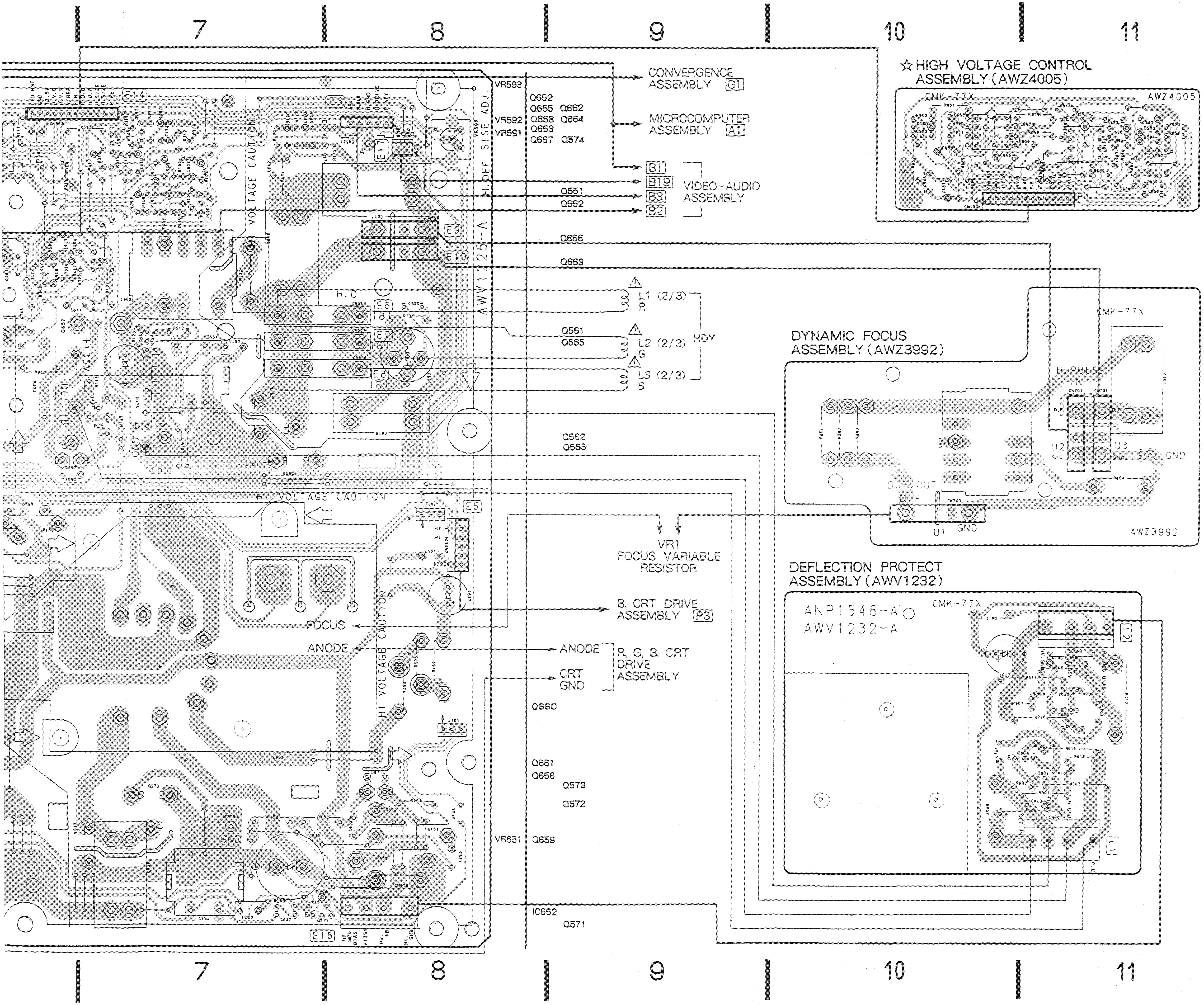

6
5
4
3
2
1
A
B
C
D
POWER SUPPLY-DEFLECTION ASSEMBLY E4
CONVERGENCE ASSEMBLY (AWZ4004)
AWZ4004
CN701
G1
BLUE
G4
RED
G5
GREEN
G6
G2
G3
H.NOKO
V.NOKO
H.PARA
V.PARA
GND
GH.KEY
GH.PIN
ANP1547-B
CMK-17X
MICROCOMPUTER ASSEMBLY A2
VIDEO-AUDIO ASSEMBLY B5
G6
G5
G4
⚠ L2 (3/3) B
⚠ L1 (3/3) B
⚠ L3 (3/3) B
DY (CONVERGENCE)


POWER SUPPLY-DEFLECTION
ASSEMBLY E4
CONVERGENCE ASSEMBLY
(AWZ4004)
CN701
G1
GND
H. NOKO
H. PARA ADJ
H. NOKO ADJ
V. PARA
V. PARA ADJ
H. PARA
AWZ4004
GV
RH
RV
BH
J71
J72
BLUE
RED
GREEN
G2
G3
G4
G5
G6
HR
HD
VD
VR
P. KEY
V. BLK
H. BLK
50/60
SBH
SBV
SRH
SRV
GH. KEY
GH. PIN
ANP1547-B
CMK-77X
G4
G5
G6
L3 (3/3)
B
L1 (3/3)
B
L2 (3/3)
B
DY
(CONVERGENCE)
VIDEO-AUDIO
ASSEMBLY
B5
MICROCOMPUTER
ASSEMBLY
A2


4
5
6
7
8
9
A
B
C
D
POWER SUPPLY-DEFLECTION ASSEMBLY E4
G1
CN701
AWZ4004
GND
H. NOKO
H. PARA ADJ.
V. NOKO ADJ.
H. NOKO ADJ.
GV
RH
RV
BH
BV
J7
J72
SKEW
BOW
KEY
S-KEY
PIN
RVBV
LIN.
S-LIN
4-LIN
SIZE
H. PARA
V. PARA
PARA ADJ.
V. NOKO
BLUE
G4
RED
G5
GREEN
G6
P. KEY
V. BLK
H. BLK
50/60
G2
G3
GH. KEY
GH. PIN
GND
GREEN
RED
BLUE
CMK-77X
ANP1547-B
Q756 IC711
IC706 Q762
Q751 Q759
Q752
Q757 Q761
Q756
IC703
IC705
IC701
IC704
IC702
IC710
IC707
Q768
IC708
Q765
Q766 IC709
Q763 Q767
Q764 Q769
VR750
VR702
VR701
VR706
VR710
VR711
VR715
VR721
VR725
VR730
VR734
VR740
VR744
VR749
VR716
VR720
VR704
VR705
VR726
VR729
VR735
VR739
VR745
VR748
G5
G6
⚠ L1 (3/3) B
⚠ L2 (3/3) B
DY (CONVERGENCE)
VIDEO-AUDIO ASSEMBLY B5
MICROCOMPUTER ASSEMBLY A2



1
2
3
4
5
6
A
B
C
D
☆POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225)
AC INPUT ASSEMBLY (AWZ3991)
AC110, 120-127, 220, 240V 50/60Hz
AC INLET
POWER TRANSFORMER
S1 VOLTAGE SELECTOR
HV. ADJ
X-RAY
E1
E2
E4
E11
E12
E13
E14
E15
PRIMARY
SECONDARY
T6.3A/250V
T4A/250V
T160mA/250V
T400mA/250V
AWV1225-A
AWZ3991
ANP1542-A
CRT GND
GND
+135V
DEF. +B
+135V ADJ
TP556
L567
L668
CMK-77X
S1
S2
S3
Q402
Q400
Q401
Q403
Q404
IC501


7
8
9
10
11
12
A
B
C
D
CONVERGENCE ASSEMBLY G1
MICROCOMPUTER ASSEMBLY A1
B1
B19
B3
B2
VIDEO-AUDIO ASSEMBLY
VR593
VR592
VR591
Q652
Q655 Q662
Q668 Q664
Q653
Q667 Q574
Q551
Q552
Q666
Q663
Q561
Q665
Q562
Q563
Q660
Q661
Q658
Q573
Q572
VR651 Q659
IC652
Q571
L1 (2/3) R
L2 (2/3) G
L3 (2/3) B
HDY
H.D
E14
E3
E17
E9
E10
E6
E7
E8
E5
E16
D.F
H.DEF SISE ADJ.
AWV1225-A
VOLTAGE CAUTION
HI VOLTAGE CAUTION
+135V
DEF.+B
H.GND
GND
VR1 FOCUS VARIABLE RESISTOR
B. CRT DRIVE ASSEMBLY P3
FOCUS
ANODE
ANODE
CRT GND
R, G, B. CRT DRIVE ASSEMBLY
☆HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)
CMK-77X
AWZ4005
DYNAMIC FOCUS ASSEMBLY (AWZ3992)
CMK-77X
H.PULSE IN
U2
U3
GND
D.F. OUT
D.F
U1
AWZ3992
DEFLECTION PROTECT ASSEMBLY (AWV1232)
ANP1548-A
AWV1232-A
CMK-77X
L2
L1

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

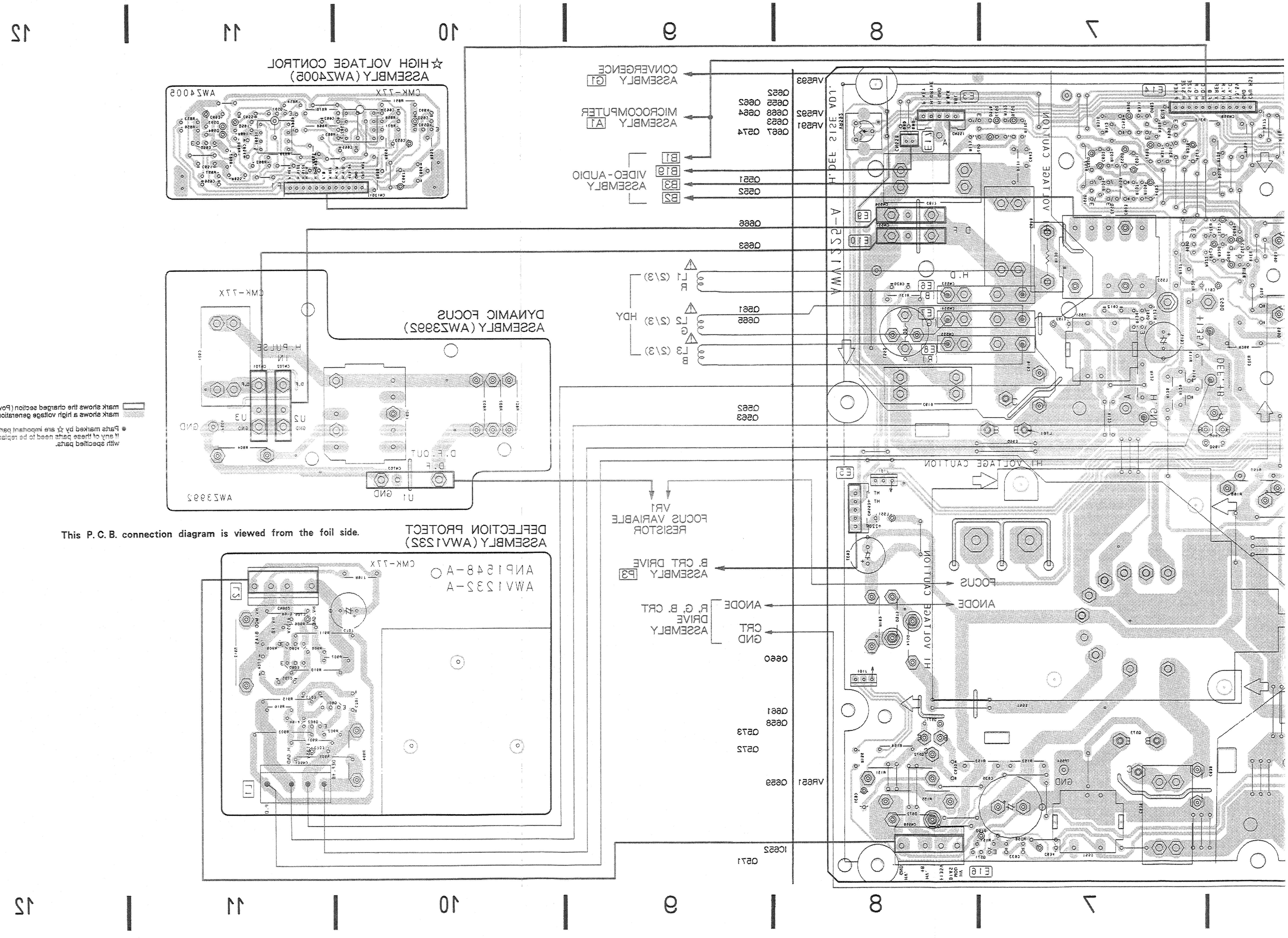
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎(double circles) shows negative terminal.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

▭ mark shows the charged section (Power supply primary side circuit).
▨ mark shows a high voltage generation point.

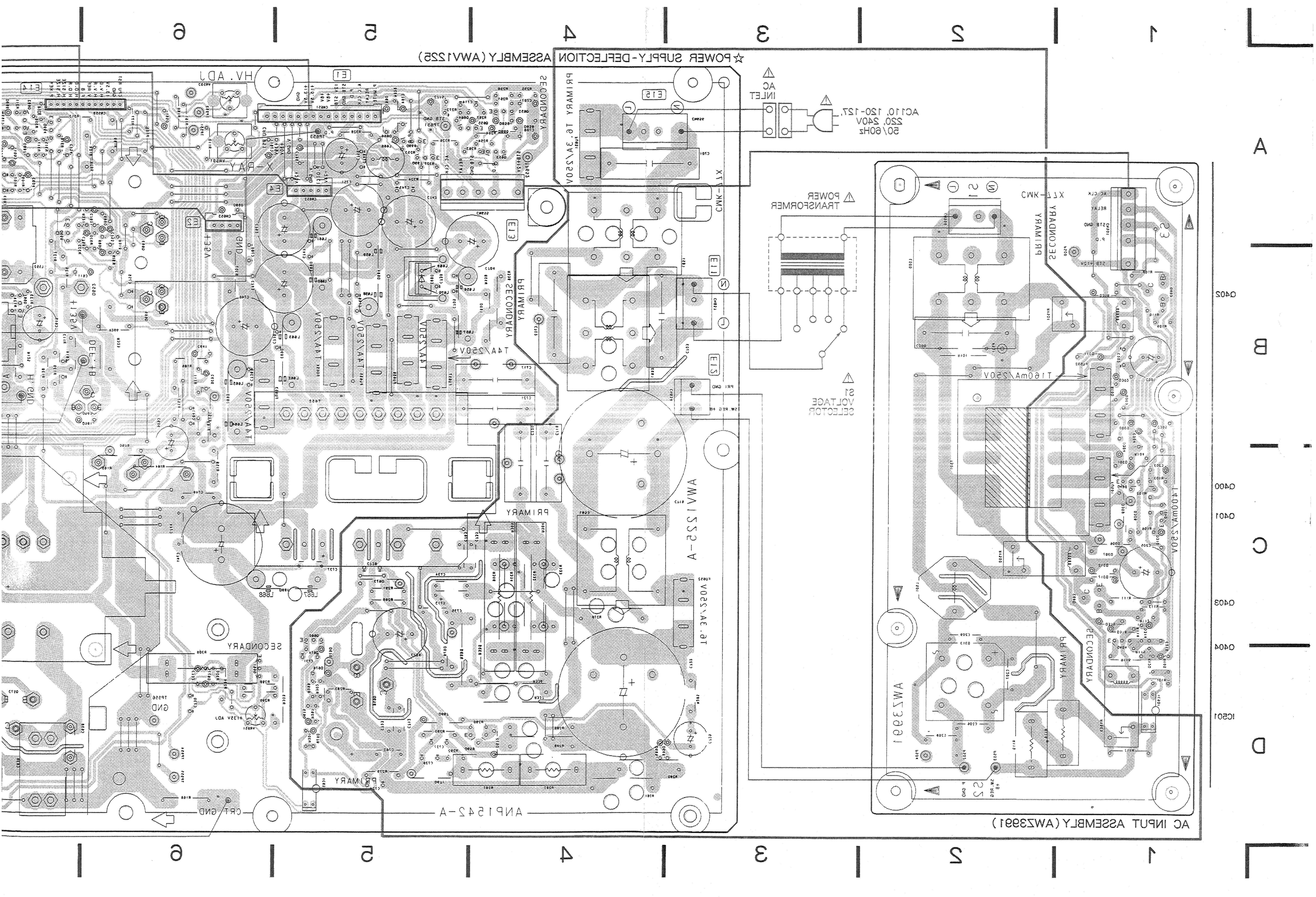
- Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.


12
11
10
9
8
7
A
B
C
D
☆HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)
AWZ4005
CMK-77X
CONVERGENCE ASSEMBLY G1
MICROCOMPUTER ASSEMBLY A1
VIDEO-AUDIO ASSEMBLY
B1
B19
B3
B2
VR593
Q652 Q662
Q655 Q668
Q688 Q664
Q653
Q667 Q574
VR592
VR591
Q551
Q552
Q666
Q663
L1 (2/3) R
L2 (2/3) G
L3 (2/3) B
HDY
Q561
Q565
Q562
Q563
DYNAMIC FOCUS ASSEMBLY (AWZ3992)
AWZ3992
H.PULSE IN
D.F. OUT
D.F
GND
U1
U2
U3
VR1 FOCUS VARIABLE RESISTOR
DEFLECTION PROTECT ASSEMBLY (AWV1232)
ANP1548-A
AWV1232-A
B. CRT DRIVE ASSEMBLY P3
R, G, B, CRT DRIVE ASSEMBLY
ANODE
CRT GND
FOCUS
Q660
Q661
Q658
Q573
Q572
Q659
VR651
IC652
Q571
H. DEF. SIZE ADJ.
AWV1521-A
HIGH VOLTAGE CAUTION
E9
E10
E6
E7
E8
E5
E14
E16
H.D
GND
+135V

This P. C. B. connection diagram is viewed from the foil side.

▭ mark shows the charged section (Power supply primary side circuit).
▨ mark shows a high voltage generation point.

● Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.

☆POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225)
AC INPUT ASSEMBLY (AWZ3991)
AC INLET
AC110, 120-127, 220, 240V 50/60Hz
POWER TRANSFORMER
S1 VOLTAGE SELECTOR
T6.3A/250V
T4A/250V
T160mA/250V
T400mA/250V
PRIMARY
SECONDARY
HV. ADJ
X-RAY
+135V ADJ
CRT GND
GND
AWV1225-A
ANP1542-A
AWZ3991
Q402
Q400
Q401
Q403
Q404
IC501
1
2
3
4
5
6
A
B
C
D

6. PCB PARTS LIST

NOTES:

- *Part without part number cannot be supplied.*
- *Parts marked by " ◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).

  $560\,\Omega \rightarrow 56 \times 10^1 \rightarrow 561$ ······ *RD1/8PM* $\boxed{5}\boxed{6}\boxed{1}$ *J*
  $47k\,\Omega \rightarrow 47 \times 10^3 \rightarrow 473$ ······ *RD1/4PS* $\boxed{4}\boxed{7}\boxed{3}$ *J*
  $0.5\,\Omega \rightarrow 0R5$ ······ *RN2H* $\boxed{0}\boxed{R}\boxed{5}$ *K*
  $1\,\Omega \rightarrow 010$ ······ *RS1P* $\boxed{0}\boxed{1}\boxed{0}$ *K*

  Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).

  $5.62k\,\Omega \rightarrow 562 \times 10^1 \rightarrow 5621$ ······ *RN1/4SR* $\boxed{5}\boxed{6}\boxed{2}\boxed{1}$ *F*
- *Parts marked by ☆ are important parts which relate with X-ray radiation.*
  If any of these parts need to be replaced, always replace with specified parts.
- *Parts marked by × are important parts which relate with X-ray radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself. If any part marked by × is replaced, there is danger of being exposed to X-rays.*

R. CRT DRIVE ASSEMBLY (AWZ3040)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q801	TRANSISTOR	2SC2278
	D801	DIODE	1SS252

COILS

Mark	No.	Description	Part No.
	L801, 802	AXIAL INDUCTOR	LAU470K
	L803	AXIAL INDUCTOR	LAU101K

CAPACITORS

Mark	No.	Description	Part No.
	C921	ELECTR. CAPACITOR	CEAS101M16
	C922	CERAMIC CAPACITOR	CKCYB681K50
	C923	ELECTR. CAP. (4.7μ/250V)	ACH-378
	C924	CERAMIC CAP. (1000p/2kV)	ACG1001

RESISTORS

Mark	No.	Description	Part No.
	R751	CARBONFILM RESISTOR	RD1/8PM103J
	R752	RESISTOR(1kΩ, 1/2W)	ACN1006
	R753, 754	METAL OXIDE RESISTOR	RS3LMF332J
	R755	RESISTOR(47Ω, 1/2W)	ACN-225

OTHERS

Mark	No.	Description	Part No.
		CRT SOCKET	AKG1004

G. CRT DRIVE ASSEMBLY (AWZ3041)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q821	TRANSISTOR	2SC2278
	D821	DIODE	1SS252

COILS

Mark	No.	Description	Part No.
	L821, 822	AXIAL INDUCTOR	LAU470K
	L823	AXIAL INDUCTOR	LAU101K

CAPACITORS

Mark	No.	Description	Part No.
	C931	ELECTR. CAPACITOR	CEAS101M16
	C932	CERAMIC CAPACITOR	CKCYB681K50
	C933	ELECTR. CAP. (4.7μ/250V)	ACH-378
	C934	CERAMIC CA. (1000p/2kV)	ACG1001

RESISTORS

Mark	No.	Description	Part No.
	R761	CARBONFILM RESISTOR	RD1/8PM103J
	R762	RESISTOR(1kΩ, 1/2W)	ACN1006
	R763, 764	METAL OXIDE RESISTOR	RS3LMF332J
	R765	RESISTOR(47Ω, 1/2W)	ACN-225

OTHERS

Mark	No.	Description	Part No.
		CRT SOCKET	AKG1004

B. CRT DRIVE ASSEMBLY (AWZ3042)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q841	TRANSISTOR	2SC2278
	D841	DIODE	1SS252

COILS

Mark	No.	Description	Part No.
	L841, 842	AXIAL INDUCTOR	LAU470K
	L843	AXIAL INDUCTOR	LAU101K

CAPACITORS

Mark	No.	Description	Part No.
	C941	ELECTR. CAPACITOR	CEAS101M16
	C942	CERAMIC CAPACITOR	CKCYB681K50
	C943	ELECTR. CAP. (4.7μ/250V)	ACH-378
	C944	CERAMIC CAP. (1000p/2kV)	ACG1001

RESISTORS

Mark	No.	Description	Part No.
	R771	CARBONFILM RESISTOR	RD1/8PM103J
	R772	RESISTOR(1kΩ, 1/2W)	ACN1006
	R773, 774	METAL OXIDE RESISTOR	RS3LMF332J
	R775	RESISTOR(47Ω, 1/2W)	ACN-225

OTHERS

Mark	No.	Description	Part No.
		CRT SOCKET	AKG1004

☆POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225)

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC652	PHOTOCUPLER	ON3171-Q
×	Q551, 552	TRANSISTOR	
⚠	Q561	TRANSISTOR	2SC3332
⚠	Q562	TRANSISTOR	2SD1276A
⚠	Q563	TRANSISTOR	2SD2300
⚠	Q571	TRANSISTOR	2SC3332
⚠	Q572	TRANSISTOR	2SD1276A
⚠	Q573	TRANSISTOR	2SD2300
	Q574	TRANSISTOR	2SC1740S
	Q652, 653	TRANSISTOR	2SA933S
	Q655	TRANSISTOR	2SC1740S
⚠	Q658	TRANSISTOR	2SC3552
	Q659	TRANSISTOR	2SB824
	Q660	TRANSISTOR	2SC1740S
	Q661	TRANSISTOR	2SC2705
	Q662, 664	TRANSISTOR	2SA933S
⚠	Q663, 665	TRANSISTOR	2SD1275
	Q666-668	TRANSISTOR	2SC1740S
×	D551, 552	ZENER DIODE	
	D553, 561	DIODE	1SS252
⚠	D562	DIODE	11E2
	D570, 571	DIODE	1SS252
⚠	D572	DIODE	RL2Z
×	D573	DIODE	
⚠	D574, 575	DIODE	ES1F
	D576	ZENER DIODE	RD20ESB2
	D577, 578	DIODE	1SS252
	D579	DIODE	11E2
	D656	ZENER DIODE	HZS6B1L
	D659-661	DIODE	1SS252
	D664, 666	DIODE	1SS252
	D667	DIODE	1SS252
	D668, 669	ZENER DIODE	RD9.1ESB2
	D670, 671	DIODE	11DF1FD
	D672	DIODE	1SS252
	D673	DIODE	11DF1FD
	D674-676	DIODE	1SS252
	D677	ZENER DIODE	HZS6C2L
	D678	DIODE	1SS252
	D679	DIODE	RP1H
	D680	DIODE	RL4Z
	D681	DIODE	RG4A
	D682	DIODE	FMP-G12S
	D683-685	DIODE	RL4Z
	D686	ZENER DIODE	HZS6A1L
	D687	ZENER DIODE	HZS6B1L
	D688	ZENER DIODE	HZS18-1L
	D689	ZENER DIODE	HZS6B1L
	D690	ZENER DIODE	RD39ESB4
	D691	DIODE	RL4Z

TRANSFORMERS, COILS AND FILTERS

Mark	No.	Description	Part No.
⚠	T551, 552	H. DRIVE TRANSFORMER	ATK1045
⚠×	T553	CONVERTER TRANS	
⚠	T652	CONVERTER TRANS	ATK1062
⚠	L551	INDUCTOR	LTA272J
⚠	L552	COIL(7μH)	ATL1053
⚠	L553	COIL	ATL1058
⚠	L651, 652	LINE FILTER	ATF1089
⚠	L653	LINE FILTER	ATF-207
	L656-665	FERRITE BEAD	ATX-028
	L666	COIL(1μH)	ATH-133
	L667-670	FERRITE BEAD	ATX-028
	L701	FERRITE BEAD	ATX-028

CAPACITORS

Mark	No.	Description	Part No.
	C601	ELECTR. CAPACITOR	CEAS221M16
	C602	ELECTR. CAPACITOR	CEAS470M16
	C603	CERAMIC CAPACITOR	CKCYF103Z50
	C604	ELECTR. CAPACITOR	CEAS221M16
⚠	C606	ELE. CAP. (33μ/160V)	ACH-370
	C611	ELECTROLYTIC CAPACIT	CEHAQ010M2C
	C612	CERAMIC CAPACITOR	CKCYB102K500
	C613	ELECTR. CAPACITOR	CEHAQ010M50
	C614	CERAMIC CAPACITOR	CCCSL101K500
⚠	C615	ELE. CAP. (1μ/160V)	ACH-372
⚠	C616	CER. CAP. (680p/2KV)	ACG1024
⚠	C617	M. P. P. CAPACITOR	CFPHW683H3A
⚠	C618	CAPACITOR	CFPHW123H3D
⚠	C619	MPP CAP. (0.82μ/200V)	ACE1044
	C620	CERAMIC CAPACITOR	CCCSL181J50
	C631	ELECTROLYTIC CAPACIT	CEHAQ010M2C
	C632	CERAMIC CAPACITOR	CCCSL101K500
	C633	CERAMIC CAPACITOR	CKDYB472K500
	C634	ELECTR. CAPACITOR	CEHAQ010M50
⚠	C635	ELE. CAP. (10μ/160V)	ACH1117
	C636	ELECTR. CAPACITOR	CEHAQ100M50
	C637	ELECTROLYTIC CAPACIT	CEHAQ220M2C
⚠	C638	CER. CAP. (680p/2kV)	ACG1024
⚠	C639	CAPACITOR	CFPHW123H3D
	C640	CERAMIC CAPACITOR	CKCYF473Z50
	C641	ELECTROLYTIC CAPACIT	CEHAQ220M50
	C642	CERAMIC CAPACITOR	CCCSL151K500
⚠	C701-703	FLM CAP. (0.1μ/250V)	ACE-507
	C704	ELECTR. CAPACITOR	CEHAQ222M35
	C705	CERAMIC CAPACITOR	CCCSL221K500
	C707	ELECTR. CAPACITOR	CEAS470M25
	C708	ELECTR. CAPACITOR	CEAS010M50
⚠	C712	CKA (2200p/2kV)	ACG-039
⚠	C713	CER CAP (4700p/2kV)	ACG1028
	C714	CERAMIC CAPACITOR	CCCSL151J50
	C715	ELECTR. CAPACITOR	CEAS101M16
⚠	C717, 718	CKA (4700p/AC400V)	ACG-505
⚠	C719	ELECTR. CAP. (470μ/400V)	ACH1170
⚠	C720, 721	CFPA (0.01μ/AC250V)	ACE-501
⚠	C722	ELECTR. CAP. (560μ/400V)	ACH1214

Mark	No.	Description	Part No.
⚠	C723	CKA (1800p/2kV)	ACG-046
	C724	AUDIO FILM CAPACITOR	CFTXA224J50
⚠	C725	CEA (4.7μ/400V)	ACH1215
	C726	AUDIO FILM CAPACITOR	CFTXA474J50
	C727	CERAMIC CAPACITOR	CCCSL221K500
⚠	C728	ELECTR. CAP. (47μ/100V)	ACH1132
	C729	CERAMIC CAPACITOR	CCCSL221K500
	C730	CERAMIC CAPACITOR	CKDYF103Z50
	C731	MYLAR FILM CAPACITOR	CQMA822J50
	C732	ELECTR. CAPACITOR	CEAS010M50
⚠	C733	CER. CAP. (1000p/2kV)	ACG-040
⚠	C734	CER CAP (4700p/2kV)	ACG1028
⚠	C735	CER. CAP. (680p/2kV)	ACG1024
	C736	CERAMIC CAPACITOR	CCCSL221K500
⚠	C737	CCA (100p/2kV)	ACG-032
	C738, 739	CERAMIC CAPACITOR	CCCSL221K500
	C740	ELECTR. CAPACITOR	CEHAQ222M50
⚠	C741	ELECTR. CAP. (560μ/160V)	ACH1146
	C742	ELECTR. CAPACITOR	CEHAQ222M35
	C743	ELECTROLYTIC CAPACIT	CEHAQ332M35
	C744	CERAMIC CAPACITOR	CKDYF103Z500
	C745	CERAMIC CAPACITOR	CKCYF473Z50
	C746, 747	CERAMIC CAPACITOR	CCCSL221K500
	C748	CERAMIC CAPACITOR	CKCYF473Z50
	C749	CERAMIC CAPACITOR	CKDYF103Z500
	C750	ELECTR. CAPACITOR	CEAS331M35
	C751, 752	ELECTR. CAPACITOR	CEHAQ222M35
	C753	CERAMIC CAPACITOR	CKCYF473Z50
	C754, 755	ELECTR. CAPACITOR	CEAS100M50
	C756	CERAMIC CAPACITOR	CKCYB681K50
	C757	ELECTR. CAPACITOR	CEAS010M50
	C758	ELECTR. CAPACITOR	CEAS100M50
	C759	ELECTR. CAPACITOR	CEAS221M16
	C760	CERAMIC CAPACITOR	CKCYF473Z50
	C761	ELECTR. CAPACITOR	CEAS010M50
	C762	CKA (2200p/2kV)	ACG-039
⚠	C763	CER. CAP. (1000p/2kV)	ACG-040
	C764	ELECTR. CAPACITOR	CEAS101M16

RESISTORS

Mark	No.	Description	Part No.
⚠×	VR591	VR	
	VR592	VR(2.2kΩ)	VRTS6VS222
×	VR593	VR	
	VR651	VR(1kΩ)	VRTS6VS102
×	R101	CARBON FILM RESISTOR	
×	R103	CARBONFILM RESISTOR	
⚠	R104	CARBON FILM RESISTOR	RD1/4PMFL3R9J
×	R105	CARBONFILM RESISTOR	
×	R107	CARBONFILM RESISTOR	
×	R108	CARBONFILM RESISTOR	
×	R109	CARBONFILM RESISTOR	
⚠×	R110	METALFILM RESISTER	
⚠×	R111	METALFILM RESISTER	
⚠	R113	CARBON FILM RESISTOR	RD1/4PMFL470J
⚠	R125	CARBONFILM RESISTOR	RD1/2PMFL102J
	R126	CARBONFILM RESISTOR	RD1/2PM473J
	R127	CARBON FILM RESISTOR	RD1/2PM153J
⚠	R128	CARBON FILM RESISTOR	RD1/4PMFL682J
⚠	R129	CARBON FILM RESISTOR	RD1/4PMFL471J
⚠	R130	RESISTOR (3.3Ω, 5W)	ACN1050
	R131	CARBONFILM RESISTOR	RD1/2PM152J
	R151	METAL OXIDE RESISTOR	RS3PMF512J
⚠	R152	CARBON FILM RESISTOR	RD1/4PMFL152J
⚠	R153	CARBON FILM RESISTOR	RD1/4PMFL471J
×	R154	CARBONFILM RESISTER	
⚠	R155	METAL OXIDE RESISTOR	RS3PMFR47J
⚠	R159	CARBON FILM RESISTOR	RD1/4PMFL101J
⚠×	R160	METALFILM RESISTER	
⚠×	R161	METALFILM RESISTER	
	R162	METAL OXIDE RESISTOR	RS2PMF101J
⚠×	R163	CARBON FILM RESISTOR	
⚠	R164, 165	METALFILM RESISTER	RN1/2PC4302F
⚠	R167	CARBONFILM RESISTOR	RD1/2PMFL122J
	R168	RESISTOR(47Ω, 1/2W)	ACN-225
⚠	R169	CARBON FILM RESISTOR	RD1/4PMFL3R9J
	R171	CARBONFILM RESISTOR	RD1/2PM123J
×	R177	CARBONFILM RESISTER	
	R266	METALFILM RESISTER	RN1/4PC1603F
	R278	METAL OXIDE RESISTOR	RS3LMF104J
⚠	R279	CARBON FILM RESISTOR	RD1/2PMFL222J
	R280, 281	METAL OXIDE RESISTOR	RS3LMF1R0J
⚠	R282	RESISTOR (4.7Ω, 5W)	ACN1051
⚠	R285	CARBON FILM RESISTOR	RD1/2PMFL103J
	R286	METAL OXIDE RESISTOR	RS3LMF6R8J
⚠	R287	RESISTOR (3.9Ω, 5W)	ACN1062
	R288	METAL OXIDE RESISTOR	RS3LMF6R8J
	R289, 291	CARBONFILM RESISTOR	RD1/2PM241J
	R293	CARBONFILM RESISTOR	RD1/2PM101J
	R294	METALFILM RESISTER	RN1/4PC3601F
	R295	METAL OXIDE RESISTOR	RS3LMF223J
	R296, 298	METALFILM RESISTER	RN1/4PC1603F
	R303	METAL OXIDE RESISTOR	RS2LMF223J
	R304	RESISTOR(10Ω, 10W)	RT10PD100K
	R305	RESISTOR(12Ω, 10W)	RT10PD120K
	R306	METAL OXIDE RESISTOR	RS3LMF223J
	R307	METAL OXIDE RESISTOR	RS1LMF272J
	R308	RESISTOR(1.5Ω, 7W)	RT7PD1R5K
	R321	METALFILM RESISTER	RN1/4PC2101F
	R322	METALFILM RESISTER	RN1/4PC2431F
	R323	METAL OXIDE RESISTOR	RS3LMF183J
	R332-337	METAL OXIDE RESISTOR	RS3LMF223J
	R338	METAL OXIDE RESISTOR	RS2LMF101J
	R339	METAL OXIDE RESISTOR	RS2LMF220J
	OTHER RESISTORS		RD1/8PM□□□J

AC INPUT ASSEMBLY (AWZ3991)

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC501	PHOTOCUPLER	ON3171-Q
	Q400	TRANSISTOR	2SA933S
	Q401	TRANSISTOR	2SC1740S
	Q402, 403	TRANSISTOR	2SD1275
	Q404	TRANSISTOR	2SD438
	D300, 301	DIODE	1SS145
	D302	ZENER DIODE	HZS6B1L
	D303, 304	DIODE	1SS145
	D305	DIODE	1SS252
	D306-309	DIODE	11E2
	D310	DIODE	1SS252
	D311, 312	ZENER DIODE	RD6.2ESB2
	D313	DIODE	RB604
	D314	DIODE	1SS252
	D315-318	ZENER DIODE	RD6.2ESB2

RELAYS

Mark	No.	Description	Part No.
⚠	RY501, 502	RELAY	ASR1036
⚠	RY503	RELAY	ASR1027

TRANSFORMER AND COILS

Mark	No.	Description	Part No.
⚠	T501	POWER TRANSFORMER	ATT1180
⚠	L500	LINE FILTER	ATF1089
	L501	AF CHOKE COIL	ATH1009

CAPACITORS

Mark	No.	Description	Part No.
⚠	C200	FLM CAP. (0.1μ/250V)	ACE-507
	C201	ELECTR. CAPACITOR	CEAS102M25
	C202	CERAMIC CAPACITOR	CKCYF103Z50
	C203	ELECTR. CAPACITOR	CEAS101M16
	C204	ELECTR. CAPACITOR	CEAS100M50
	C205	ELECTROLYTIC CAPACIT	CEAS102M50
⚠	C206-209	CKA (0.01μ/AC400V)	ACG1003
	C210	ELECTR. CAPACITOR	CEAS101M25

RESISTORS

Mark	No.	Description	Part No.
	R101	RESISTOR(2.2MΩ, 1/2W)	ACN-208
	R108, 111	CARBON FILM RESISTOR	RD1/2PM270J
⚠	R116	RESISTOR (2.7Ω, 5W)	ACN1060
	R118	CARBON FILM RESISTOR	RD1/4PM470J
⚠	R119	RESISTOR (2.7Ω, 5W)	ACN1060
	OTHER RESISTORS		RD1/8PM□□□J

DYNAMIC FOCUS ASSEMBLY (AWZ3992)

COIL

Mark	No.	Description	Part No.
⚠	L601	COIL (7μH)	ATL1057

CAPACITORS

Mark	No.	Description	Part No.
⚠	C901	CAPACITOR	CFPHW103H3D

RESISTORS

Mark	No.	Description	Part No.
	R801-803	RESISTOR(100KΩ, 1/2W)	ACN1074
	R804	METAL OXIDE RESISTOR	RS2PMF220J

AM-DEMOD ASSEMBLY (AWZ3993)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1012	TV SIF IC	LA7710
	Q1054	TRANSISTOR	2SC2668
	Q1060	TRANSISTOR	2SC1740S
	Q1061	TRANSISTOR	2SC2668

FILTERS AND COILS

Mark	No.	Description	Part No.
	F1024	SAW FILTER	ATF1115
	F1025	FILTER	ATF-183
	L1018	TUNING COIL	ATC-250
	L1021	AXIAL INDUCTOR	LAU5R6K

CAPACITORS

Mark	No.	Description	Part No.
	C1042	CERAMIC CAPACITOR	CKDYF103Z50
	C1043	CERAMIC CAPACITOR	CKDYB102K50
	C1044	CERAMIC CAPACITOR	CKPUYY103M16
	C1045	CERAMIC CAPACITOR	CKDYF103Z50
	C1048	ELECTR. CAPACITOR	CEAS100M50
	C1049	ELECTR. CAPACITOR	CEAS100M25
	C1051	ELECTR. CAPACITOR	CEAS220M25
	C1053	ELECTR. CAPACITOR	CEAS010M50
	C1054	CERAMIC CAPACITOR	CKDYF103Z50
	C1057	CERAMIC CAPACITOR	CKCYB222K50
	C1062	ELECTR. CAPACITOR	CEAS101M25
	C1063	CERAMIC CAPACITOR	CKDYF103Z50
	C1064	CERAMIC CAPACITOR	CCDCH270J50
	C1109	ELECTR. CAPACITOR	CEAS010M50
	C1152	ELECTR. CAPACITOR	CEAS470M25
	C1153	CERAMIC CAPACITOR	CKDYB103K50
	C1154	CERAMIC CAPACITOR	CKPUYY103M16

RESISTORS

Mark	No.	Description	Part No.
	VR1012	VR (10kΩ)	ACP1043
	OTHER RESISTORS		RD1/8PM□□□J

4.5MHz B.P.F. ASSEMBLY (AWZ3994)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q1049, 1052	TRANSISTOR	2SC1740S
	Q1056, 1057	TRANSISTOR	2SC1740S

FILTERS

Mark	No.	Description	Part No.
	F1022, 1023	CERAMIC FILTER	ATF-166

CAPACITORS

Mark	No.	Description	Part No.
	C1104	CERAMIC CAPACITOR	CKDYF103Z50
	C1126	CERAMIC CAPACITOR	CKDYB103K50
	C1140	ELECTR. CAPACITOR	CEAS470M16
	C1141	CERAMIC CAPACITOR	CKDYX104M25
	C1142	CERAMIC CAPACITOR	CKDYF103Z50

RESISTORS

Mark	No.	Description	Part No.
	R1122	CARBON FILM RESISTOR	RD1/4PMFL101J
		OTHER RESISTORS	RD1/8PM□□□J

VIDEO-AUDIO ASSEMBLY (AWV1227)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC351	REGULATOR IC	NJM7805FA
	IC352	LOGIC IC	TC4066BP
	IC353	TV IC	PA0028
	IC354	TV IC	PA0030
	IC355	C.T.I. IC	TDA4563
	IC356	TV IC	TA8659AN
	IC751	AUDIO IC	TA7630P
	IC752	AUDIO IC	TA8200AH
	Q351,354	TRANSISTOR	2SC1740S
	Q356-358	TRANSISTOR	2SC1740S
	Q359	TRANSISTOR	2SA933S
	Q360-363	TRANSISTOR	2SC1740S
	Q364	TRANSISTOR	2SA933S
	Q365	TRANSISTOR	RN1203
	Q366	TRANSISTOR	2SA933S
	Q367	TRANSISTOR	RN1203
	Q368-371	TRANSISTOR	2SC1740S
	Q372	TRANSISTOR	RN1203
	Q373	TRANSISTOR	2SC1740S
	Q374,375	TRANSISTOR	2SA933S
	Q376-378	TRANSISTOR	2SC1740S
	Q379,380	TRANSISTOR	2SA933S
	Q381	TRANSISTOR	2SD1276A
	Q382	TRANSISTOR	2SC1740S
	Q383	TRANSISTOR	2SB950A
	Q384	TRANSISTOR	2SC1845
	Q385	TRANSISTOR	2SC1740S
	Q386,387	TRANSISTOR	2SA933S
	Q388-392	TRANSISTOR	2SC1740S
	Q393	TRANSISTOR	2SA933S
	Q394	TRANSISTOR	RN1201
	Q395,396	TRANSISTOR	2SA933S
	Q397,398	TRANSISTOR	2SC1740S
	Q399	TRANSISTOR	2SA933S
	Q400	TRANSISTOR	2SC1740S
	Q401-404	TRANSISTOR	2SA933S
	Q405-408	TRANSISTOR	2SC1740S
	Q409	TRANSISTOR	2SA933S
	Q410	TRANSISTOR	2SC1740S
	Q651,652	TRANSISTOR	2SA933S
	Q653,654	TRANSISTOR	2SC1740S
	Q655-657	TRANSISTOR	2SA933S
	Q658,659	TRANSISTOR	2SC1740S
	Q660-662	TRANSISTOR	2SA933S
	Q663,664	TRANSISTOR	2SC1740S
	Q665,666	TRANSISTOR	2SA933S
	Q667-670	TRANSISTOR	2SC1740S
	Q671	TRANSISTOR	2SA933S
	Q672	TRANSISTOR	2SC1740S
	Q673	TRANSISTOR	2SA933S
	Q751-754	TRANSISTOR	2SC1740S
	Q757	TRANSISTOR	2SA933S
	Q758-760	TRANSISTOR	2SC1740S
	D351,352	DIODE	1SS252
	D353	ZENER DIODE	HZS5BLL
	D354-357	DIODE	1SS252
	D358	ZENER DIODE	HZS5BLL
	D359-363	DIODE	1SS252
	D364	ZENER DIODE	RD9.1ESB
	D365-367	DIODE	1SS252
	D368	ZENER DIODE	RD5.1ESB3
	D369	ZENER DIODE	RD12ESB
	D370	ZENER DIODE	RD5.1ESB3
	D371	ZENER DIODE	RD6.8ESB3
	D372-378	DIODE	1SS252
	D381,382	ZENER DIODE	RD6.2ESB1
	D383-386	DIODE	1SS252
	D388	DIODE	1SS252
	D390-392	DIODE	1SS252
	D650,651	ZENER DIODE	RD4.3ESB3
	D652-663	DIODE	1SS252
	D751	DIODE	11E2
	D752,753	ZENER DIODE	RD6.8ESB3
	D754-765	DIODE	1SS252
	D766	ZENER DIODE	RD5.6ESB
	D767-769	DIODE	1SS252

COILS

Mark	No.	Description	Part No.
	L351,352	AXIAL INDUCTOR	LAU270K
	L353	COIL	ATG1027
	L354	COIL	ATG1009
	L355	COIL	ATG1027
	L356	AXIAL INDUCTOR	LAU8R2K
	L357	COIL	ATG1026
	L358	AXIAL INDUCTOR	LAU680K
	L359	AXIAL INDUCTOR	LAU470K
	L360,361	AXIAL INDUCTOR	LAU330K
	L362	COIL	ATG1033
	L651-653	AXIAL INDUCTOR	LAU6R8K
	L751,752	AF CHOKE COIL	ATH1009
	L753	AXIAL INDUCTOR	LAU6R8K
	L754-759	FERRITE BEAD	ATX1008

CAPACITORS

Mark	No.	Description	Part No.
	C351	ELECTR.CAPACITOR	CEAS470M16
	C352,353	CERAMIC CAPACITOR	CKCYB103K50
	C354	ELECTR.CAPACITOR	CEAS470M16
	C355	ELECTR.CAPACITOR	CEAS100M50
	C356	ELECTR.CAPACITOR	CEAS221M16
	C357	CERAMIC CAPACITOR	CKCYF103Z50
	C358	ELECTR.CAPACITOR	CEAS470M50
	C359	CERAMIC CAPACITOR	CKCYX104M25
	C360	ELECTR.CAPACITOR	CEAS101M16
	C361	CERAMIC CAPACITOR	CKCYX104M25
	C362	ELECTROLYTIC CAPACIT	CEANPR47M50
	C363,364	ELECTR.CAPACITOR	CEAS100M50
	C365	MYLAR FILM CAPACITOR	CQMA224J50
	C366	ELECTR.CAPACITOR	CEAS100M50
	C367	MYLAR FILM CAPACITOR	CQMA204J50
	C368	MYLAR FILM CAPACITOR	CQMA272J50
	C369	ELECTR.CAPACITOR	CEAS101M16
	C370	CERAMIC CAPACITOR	CKCYB103K50

Mark	No.	Description	Part No.
	C371	ELECTR. CAPACITOR	CEAS4R7M50
	C372	ELECTR. CAPACITOR	CEAS470M16
	C373	ELECTR. CAPACITOR	CEAS100M50
	C375	CERAMIC CAPACITOR	CCCSL330J50
	C376	ELECTR. CAPACITOR	CEASR68M50
	C377	CERAMIC CAPACITOR	CCCSL221J50
	C378	CERAMIC CAPACITOR	CCCSL220J50
	C379	CERAMIC CAPACITOR	CCCSL820J50
	C380	CERAMIC CAPACITOR	CCCSL271J50
	C381, 382	CERAMIC CAPACITOR	CCCSL270J50
	C383	ELECTR. CAPACITOR	CEAS100M50
	C384	CERAMIC CAPACITOR	CCCSL470J50
	C385	ELECTR. CAPACITOR	CEAS4R7M50
	C386	CERAMIC CAPACITOR	CKCYX104M25
	C387	ELECTR. CAPACITOR	CEAS220M25
	C388	ELECTR. CAPACITOR	CEAS101M10
	C389	ELECTR. CAPACITOR	CEAS010M50
	C390	ELECTR. CAPACITOR	CEAS220M25
	C391	CERAMIC CAPACITOR	CKCYX104M25
	C392	CERAMIC CAPACITOR	CKCYB561K50
	C393	ELECTR. CAPACITOR	CEAS010M50
	C394	ELECTR. CAPACITOR	CEAS101M16
	C395	CERAMIC CAPACITOR	CKCYX104M25
	C396	ELECTROLYTIC CAPACIT	CEAS6R8M50
	C397	ELECTR. CAPACITOR	CEAS100M50
	C398	CERAMIC CAPACITOR	CKCYB102K50
	C399	ELECTR. CAPACITOR	CEAS4R7M50
	C400-402	AUDIO FILM CAPACITOR	CFTXA104J50
	C403	ELECTR. CAPACITOR	CEAS101M16
	C404	CERAMIC CAPACITOR	CKPUYY103M16
	C405-407	AUDIO FILM CAPACITOR	CFTXA104J50
	C408	MYLAR FILM CAPACITOR	CQMA562K50
	C409	AUDIO FILM CAPACITOR	CFTXA224J50
	C410	CERAMIC CAPACITOR	CKCYB103K50
	C411	CERAMIC CAPACITOR	CCCSL271J50
	C412	CERAMIC CAPACITOR	CKCYX104M25
	C413	MYLAR FILM CAPACITOR	CQMA223K50
	C414	ELECTR. CAPACITOR	CEAS010M50
	C415, 416	CERAMIC CAPACITOR	CCCSL181J50
	C417, 418	CERAMIC CAPACITOR	CCCSL680J50
	C419	ELECTR. CAPACITOR	CEAS010M50
	C420	CERAMIC CAPACITOR	CCCCH220J50
	C421	ELECTR. CAPACITOR	CEASR47M50
	C422, 423	CERAMIC CAPACITOR	CKCYB471K50
	C424	CERAMIC CAPACITOR	CCCCH070D50
	C425	CERAMIC CAPACITOR	CKCYX104M25
	C426	ELECTR. CAPACITOR	CEAS101M16
	C427	ELECTR. CAPACITOR	CEAS010M50
	C428	CERAMIC CAPACITOR	CKCYB103K50
	C429	CERAMIC CAPACITOR	CCCCH080D50
	C430	CERAMIC CAPACITOR	CCCCH220J50
	C431-433	CERAMIC CAPACITOR	CKCYB103K50
	C434, 435	MYLAR FILM CAPACITOR	CQMA563K50
	C436	CERAMIC CAPACITOR	CCCCH270J50
	C437	CERAMIC CAPACITOR	CKCYB103K50
	C438	CERAMIC CAPACITOR	CCCCH820J50
	C439	ELECTR. CAPACITOR	CEANP2R2M50

Mark	No.	Description	Part No.
	C440	CERAMIC CAPACITOR	CKCYB103K50
	C441	CERAMIC CAPACITOR	CCCCH270J50
	C442	CERAMIC CAPACITOR	CCCCH330J50
	C443	MYLAR FILM CAPACITOR	CQMA563K50
	C444	CERAMIC CAPACITOR	CCCCH150J50
	C445	MYLAR FILM CAPACITOR	CQMA823K50
	C446	AUDIO FILM CAPACITOR	CFTXA394J50
	C447	CERAMIC CAPACITOR	CKCYB103K50
	C448	ELECTR. CAPACITOR	CEAS010M50
	C449	CERAMIC CAPACITOR	CKCYB561K50
	C450, 451	CERAMIC CAPACITOR	CCCSL101J50
	C452	CERAMIC CAPACITOR	CKCYB103K50
	C453	CERAMIC CAPACITOR	CCCCH270J50
	C454	ELECTR. CAPACITOR	CEAS470M16
	C455	ELECTR. CAPACITOR	CEANP2R2M50
	C456-458	ELECTR. CAPACITOR	CEAS222M25
	C459	ELECTR. CAPACITOR	CEAS100M50
	C460	ELECTR. CAPACITOR	CEAS4R7M50
	C461	CERAMIC CAPACITOR	CKCYB103K50
	C462	ELECTR. CAPACITOR	CEAS330M50
	C463	CERAMIC CAPACITOR	CKCYF103Z50
	C465	ELECTR. CAPACITOR	CEAS4R7M50
	C466	ELECTR. CAPACITOR	CEAS222M16
	C467, 468	ELECTR. CAPACITOR	CEASR47M50
	C469, 470	CERAMIC CAPACITOR	CCCSL101J50
	C471	CERAMIC CAPACITOR	CCCSL680J50
	C472, 473	CERAMIC CAPACITOR	CCCSL820J50
	C474, 475	ELECTR. CAPACITOR	CEAS010M50
	C476	CERAMIC CAPACITOR	CKCYB103K50
	C477	ELECTR. CAPACITOR	CEAS2R2M50
	C478	ELECTR. CAPACITOR	CEANP3R3M50
	C479	ELECTR. CAPACITOR	CEAS010M50
	C480	ELECTR. CAPACITOR	CEAS100M50
	C481	ELECTR. CAPACITOR	CEANP2R2M50
	C482	ELECTR. CAPACITOR	CEAS2R2M50
	C483, 484	CERAMIC CAPACITOR	CCCSL220J50
	C485	CERAMIC CAPACITOR	CKCYB331K50
	C486	CERAMIC CAPACITOR	CKCYF103Z50
	C487	ELECTR. CAPACITOR	CEAS470M16
	C489	CERAMIC CAPACITOR	CKCYB471K50
	C651	ELECTR. CAPACITOR	CEAS101M16
	C652	CERAMIC CAPACITOR	CKCYX104M25
	C653	ELECTR. CAPACITOR	CEAS221M16
	C654	CERAMIC CAPACITOR	CKCYX104M25
	C655	CERAMIC CAPACITOR	CKCYB391K50
	C656	CERAMIC CAPACITOR	CCCSL151J50
	C657	CERAMIC CAPACITOR	CCCSL101J50
	C658	CERAMIC CAPACITOR	CKCYB391K50
	C659	CERAMIC CAPACITOR	CCCSL121J50
	C660	CERAMIC CAPACITOR	CCCSL101J50
	C661	CERAMIC CAPACITOR	CCCSL121J50
	C662	CERAMIC CAPACITOR	CCCSL560J50
	C663	CERAMIC CAPACITOR	CCCSL101J50
	C664	ELECTR. CAPACITOR	CEAS100M50

Mark	No.	Description	Part No.
	C751, 752	AUDIO FILM CAPACITOR	CFTXA154J50
	C753	ELECTR. CAPACITOR	CEAS470M10
	C754, 755	CERAMIC CAPACITOR	CKCYB562K50
	C756	AUDIO FILM CAPACITOR	CFTXA124J50
	C757	ELECTR. CAPACITOR	CEAS470M10
	C758	AUDIO FILM CAPACITOR	CFTXA124J50
	C759	CERAMIC CAPACITOR	CKCYF473Z50
	C760-763	ELECTR. CAPACITOR	CEAS470M10
	C764	CERAMIC CAPACITOR	CKCYF103Z50
	C765	ELECTR. CAPACITOR	CEAS222M16
	C766	ELECTR. CAPACITOR	CEAS470M10
	C767, 768	CERAMIC CAPACITOR	CKMYB561K50
	C769	CERAMIC CAPACITOR	CKCYF473Z50
	C770	ELECTR. CAPACITOR	CEAS100M50
	C771, 772	ELECTR. CAPACITOR	CEAS2R2M50
	C773	CERAMIC CAPACITOR	CKCYB102K50
	C774	ELECTROLYTIC CAPACIT	CEAS102M6
	C775	CERAMIC CAPACITOR	CKCYB102K50
	C776	ELECTROLYTIC CAPACIT	CEHAQ330M25
	C777	ELECTR. CAPACITOR	CEAS222M35
	C778	CERAMIC CAPACITOR	CKCYB102K50
	C779	ELECTROLYTIC CAPACIT	CEHAQ2R2M50
	C780	CERAMIC CAPACITOR	CKCYB102K50
	C781	ELECTROLYTIC CAPACIT	CEHAQ2R2M50
	C782	ELECTROLYTIC CAPACIT	CEHAQ330M25
	C783	ELECTR. CAPACITOR	CEAS222M35
	C784, 785	ELECTROLYTIC CAPACIT	CEHAQ470M50
	C786, 787	CERAMIC CAPACITOR	CKCYF473Z50
	C788	ELECTR. CAPACITOR	CEAS010M50
	C789	CERAMIC CAPACITOR	CKCYF473Z50
	C790	AUDIO FILM CAPACITOR	CFTXA124J50
	C791, 792	CERAMIC CAPACITOR	CCCSL221J50
	C793	AUDIO FILM CAPACITOR	CFTXA124J50
	C794	CERAMIC CAPACITOR	CKCYF103Z50
	C795	ELECTR. CAPACITOR	CEHAQ471M50
	C796	CERAMIC CAPACITOR	CKCYF473Z50
	C799	ELECTR. CAPACITOR	CEAS101M16
	C800	CERAMIC CAPACITOR	CKCYB102K50
	C801, 802	ELECTROLYTIC CAPACIT	ACH1216
	C803	ELECTR. CAPACITOR	CEAS010M50

RESISTORS

Mark	No.	Description	Part No.
	VR351	VR (100kΩ)	ACP1046
	VR352	VR (47kΩ)	ACP1045
	VR353	VR (100kΩ)	ACP1046
	VR354	VR (4.7kΩ)	VRTS6VS472
	VR356	VR (470Ω)	ACP1039
	VR357	VR (100Ω)	VRTS6VS101
	VR651-653	VR (470Ω)	ACP1039
	R370	CARBONFILM RESISTOR	RD1/2PMFL470J
	R438	CARBON FILM RESISTOR	RD1/2PMFL4R7J
	R493	CARBONFILM RESISTOR	RD1/2PM221J
	R535, 536	METAL OXIDE RESISTOR	RS1LMF010J
	R547	CARBON FILM RESISTOR	RD1/2PM472J
	R548	CARBON FILM RESISTOR	RD1/2PM222J
	R561	METAL OXIDE RESISTOR	RS2LMF010J
	R562-564	CARBON FILM RESISTOR	RD1/2PMF101J
	R565	CARBON FILM RESISTOR	RD1/4PM562J
	R568	METAL OXIDE RESISTOR	RS3LMF3R9J
	R651	CARBON FILM RESISTOR	RD1/2PM471J
	R659	CARBON FILM RESISTOR	RD1/4PM221J
	R660	CARBON FILM RESISTOR	RD1/2PM561J
	R676	CARBON FILM RESISTOR	RD1/4PM221J
	R677	CARBON FILM RESISTOR	RD1/2PM561J
	R696	CARBON FILM RESISTOR	RD1/4PM221J
	R697	CARBON FILM RESISTOR	RD1/2PM561J
	R707-709	CARBONFILM RESISTOR	RD1/2PM221J
	R773, 774	CARBONFILM RESISTOR	RD1/2PM152J
	R785	CARBON FILM RESISTOR	RD1/4PMFL222J
	R795	CARBON FILM RESISTOR	RD1/4PMFL220J
	R796, 797	CARBON FILM RESISTOR	RD1/4PMFL101J
	R804, 805	CARBON FILM RESISTOR	RD1/4PMFL2R2J
		OTHER RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	DL351	FILTER	ATN1007
	DL352	FILTER	ATN1008
	DL353	FILTER	ATN1007
	DL354	DELAY LINE	ATN1014
	DL355	GLASS DELAY LINE	ATN1019
	TH370	THERMISTOR	TH101-2
	TH370	THERMISTOR	TH101-2
	X1101	CRYSTAL RESONATOR	ASS-041
	X1102	CERAMIC RESONATOR	ASS1003
	X1103	CRYSTAL RESONATOR	ASS-028

MICROCOMPUTER ASSEMBLY (AWZ3995)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC301	CONTROL MICROCOMPUTER	PD5173B9
	IC302	LOGIC IC	MC14051BCP
	IC303	REGULATOR IC	NJM7805FA
	IC304	SYSTEM RESET IC	MC34064P
	IC305	REGULATOR IC	NJM7809A
	IC306	OUTPUT EXPANDER IC	PD0012A
	IC307		X24C08P
	Q301	TRANSISTOR	2SA933S
	Q302	TRANSISTOR	2SC1740S
	Q303	TRANSISTOR	2SA933S
	Q304-310	TRANSISTOR	2SC1740S
	Q311-320	TRANSISTOR	2SA933S
	Q321-325	TRANSISTOR	2SC1740S
	Q326	TRANSISTOR	2SA933S
	Q327	TRANSISTOR	2SC1740S
	Q328	TRANSISTOR	2SA933S
	Q329-331	TRANSISTOR	2SC1740S
	Q333-335	TRANSISTOR	2SC1740S
	Q336	TRANSISTOR	2SA933S
	Q337-340	TRANSISTOR	2SC1740S
	Q341	TRANSISTOR	2SD438
	Q342	TRANSISTOR	2SC1740S
	Q343	TRANSISTOR	2SA933S
	Q344-349	TRANSISTOR	2SC1740S
	Q350	TRANSISTOR	2SA933S
	Q352, 353	TRANSISTOR	2SC1740S
	Q354	TRANSISTOR	2SA933S

Mark	No.	Description	Part No.
	Q355	TRANSISTOR	2SC1740S
	Q356	P-FET	2SJ103
	D301	ZENER DIODE	RD5.6ESB3
	D302-312	DIODE	1SS252
	D314-317	DIODE	1SS252
	D318	ZENER DIODE	RD5.1ESB2
	D319	DIODE	1SS252
	D325	ZENER DIODE	RD5.1ESB3
	D326-330	DIODE	1SS252
	D340	DIODE	1SS252

CAPACITORS

Mark	No.	Description	Part No.
	C301, 302	ELECTR. CAPACITOR	CEAS2R2M50
	C303	ELECTR. CAPACITOR	CEAS470M25
	C304	ELECTR. CAPACITOR	CEAS100M50
	C305-307	ELECTR. CAPACITOR	CEAS2R2M50
	C308	CERAMIC CAPACITOR	CKCYX104M25
	C309	ELECTR. CAPACITOR	CEAS2R2M50
	C310	CERAMIC CAPACITOR	CKCYF472Z50
	C311	ELECTR. CAPACITOR	CEAS0R1M50
	C312-316	ELECTR. CAPACITOR	CEAS010M50
	C317	CERAMIC CAPACITOR	CKCYF473Z50
	C318	ELECTR. CAPACITOR	CEAS010M50
	C319	ELECTR. CAPACITOR	CEAS2R2M50
	C320, 321	ELECTR. CAPACITOR	CEAS470M25
	C322, 323	CERAMIC CAPACITOR	CKCYF473Z50
	C324	ELECTR. CAPACITOR	CEAS330M25
	C326	ELECTR. CAPACITOR	CEAS470M25
	C327	CERAMIC CAPACITOR	CKCYF473Z50
	C328	ELECTR. CAPACITOR	CEAS470M25
	C329	CERAMIC CAPACITOR	CKCYF472Z50
	C330	CERAMIC CAPACITOR	CKCYF473Z50
	C331	CERAMIC CAPACITOR	CKCYF472Z50
	C332	CERAMIC CAPACITOR	CKCYF473Z50
	C333	ELECTR. CAPACITOR	CEAS100M50
	C334	ELECTR. CAPACITOR	CEAS0R1M50
	C335	CERAMIC CAPACITOR	CKCYF472Z50
	C336	ELECTROLYTIC CAPACIT	CEHAQ101M25
	C337	ELECTR. CAPACITOR	CEAS010M50
	C338	CERAMIC CAPACITOR	CKCYF103Z50
	C339	ELECTR. CAPACITOR	CEAS470M25
	C340	CERAMIC CAPACITOR	CKCYF473Z50
	C341	ELECTR. CAPACITOR	CEAS470M25
	C342	CERAMIC CAPACITOR	CKCYF473Z50
	C343	CERAMIC CAPACITOR	CCCCH150J50
	C343	CERAMIC CAPACITOR	CCDCH150J50
	C344	CERAMIC CAPACITOR	CCCCH220J50
	C345	CERAMIC CAPACITOR	CKCYF473Z50
	C346	ELECTR. CAPACITOR	CEAS101M10
	C347	CERAMIC CAPACITOR	CKCYF103Z50
	C348	ELECTROLYTIC CAPACIT	CEHAQ101M25
	C349	CERAMIC CAPACITOR	CKCYF472Z50
	C350	ELECTR. CAPACITOR	CEAS101M10
	C351, 352	CERAMIC CAPACITOR	CKCYB103K50
	C353	ELECTR. CAPACITOR	CEAS101M10
	C361	ELECTR. CAPACITOR	CEAS101M25
	C362	CERAMIC CAPACITOR	CKCYF472Z50
	C363	MYLAR FILM CAPACITOR	CQMA104K50
	C364	MYLAR FILM CAPACITOR	CQMA393K50
	C365	MYLAR FILM CAPACITOR	CQMA333K50
	C370	ELECTR. CAPACITOR	CEANP100M35

RESISTORS

Mark	No.	Description	Part No.
	VR301	VR (2.2kΩ)	ACP1041
	R305, 307	CARBONFILM RESISTOR	RD1/2PM122J
	R367, 368	RESISTOR ARRAY(100K)	RA6S104J
	R373	CARBON FILM RESISTOR	RD1/4PMFL3R3J
	R376	CARBONFILM RESISTOR	RD1/2PMFL470J
	R395	CARBON FILM RESISTOR	RD1/4PM151J
	R507	CARBON FILM RESISTOR	RD1/2PMFL621J
	R509	METAL OXIDE RESISTOR	RS2LMF3R9J
		OTHER RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X201	CERAMIC OSCILLATOR(4.19MHz)	ASS1022

TUNER-NICAM ASSEMBLY (AWZ3996)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC11	LOGIC IC	TC4052BP
	IC13	TV IC	M51365SP
	IC14	MULTI VIF IC	M51419ASP
	IC15	TV IC	SBX1475-11
	IC201	MULTISOUND PROCESSOR	MSP2400
	IC202	A/D CONVERTER FOR TV	ADC2301E
	IC203	AUDIO MIXER FOR TV	AMU2481VS
	IC204-206	OP-AMP IC	NJM4558DXP
	Q11-16	TRANSISTOR	2SC1740S
	Q17	TRANSISTOR	2SC2668
	Q18	TRANSISTOR	2SC1740S
	Q19	TRANSISTOR	2SA933S
	Q21, 22	TRANSISTOR	2SC2668
	Q25, 26	TRANSISTOR	2SC2668
	Q28	TRANSISTOR	RN1203
	Q31	TRANSISTOR	2SC1740S
	Q32	TRANSISTOR	2SC2668
	Q34	TRANSISTOR	2SC1740S
	Q35, 37	TRANSISTOR	RN1203
	Q39, 40	TRANSISTOR	RN1203
	Q43	TRANSISTOR	2SC2668
	Q44-46	TRANSISTOR	2SC1740S
	Q50	TRANSISTOR	2SC1740S
	Q53-55	TRANSISTOR	2SC1740S
	Q58	TRANSISTOR	2SC1740S
	Q201, 202	TRANSISTOR	2SC1740S
	Q2000	TRANSISTOR	2SC1740S
	D11	ZENER DIODE	RD33ESB2
	D12-14	DIODE	1SS252
	D15	DIODE	ND487C1-3R
	D16-21	DIODE	1SS85
	D23, 24	DIODE	1SS252
	D26	ZENER DIODE	RD10ESB2
	D27	DIODE	1SS252
	D28, 29	DIODE	1SS85

Mark	No.	Description	Part No.
	D201	ZENER DIODE	RD3. 9ESB
	D202-208	DIODE	1SS252
	D2000-2003	DIODE	1SS252

COILS, TRANSFORMERS AND FILTERS

Mark	No.	Description	Part No.
	F11	FILTER	ATF1021
	F12	TRAP FILTER	ATF1053
	F13	TRAP FILTER	ATF1052
	F18	TRAP FILTER	ATF1051
	F19	TRAP FILTER	ATF1063
	F20	FILTER	ATF1020
	F21	SAW FILTER	ATF1114
	F201	COIL	ATG1049
	L11-13	AXIAL INDUCTOR	LAU2R2M
	L15	AXIAL INDUCTOR	LAU5R6K
	L16	OSC COIL	ATG1046
	L17	COIL	ATG1047
	L19	TUNING COIL	ATG1048
	L20	TUNING COIL	ATG1031
	L22	TUNING COIL	ATC-250
	L23	AXIAL INDUCTOR	LAU5R6K
	L28, 29	AXIAL INDUCTOR	LAU5R6K
	L30	TUNING COIL	ATC-250
	L31	AXIAL INDUCTOR	LAU5R6K
	L32	TUNING COIL	ATG1030
	L34, 35	AXIAL INDUCTOR	LAU5R6K
	L36	AXIAL INDUCTOR	LAU120K
	L37, 38	AXIAL INDUCTOR	LAU5R6K
	L39	AXIAL INDUCTOR	LAU3R3K
	L40	AXIAL INDUCTOR	LAU2R2M
	L41	AXIAL INDUCTOR	LAU1R5M
	L201, 202	AXIAL INDUCTOR	LAU4R7J
	L203, 204	FERRITE BEAD	ATX1008
	L205	AXIAL INDUCTOR	LAU4R7J
	L206	FERRITE BEAD	ATX1008
	L207	AXIAL INDUCTOR	LAU150J
	L208	AXIAL INDUCTOR	LAU100J
	L2000	AXIAL INDUCTOR	LAU120J
	T11, 12	TRANSFORMER	ATG1045

CAPACITORS

Mark	No.	Description	Part No.
	C12, 13	CERAMIC CAPACITOR	CCDSL470J50
	C14	CERAMIC CAPACITOR	CKDYX473M25
	C15	ELECTR. CAPACITOR	CEAS100M50
	C16	CERAMIC CAPACITOR	CKDYF472Z50
	C17	CERAMIC CAPACITOR	CKDYF103Z50
	C18	ELECTR. CAPACITOR	CEAS101M25
	C19	CERAMIC CAPACITOR	CKDYF103Z50
	C20	ELECTR. CAPACITOR	CEAS470M25
	C21	CERAMIC CAPACITOR	CKDYX473M25
	C22	CERAMIC CAPACITOR	CKDYF472Z50
	C23	CERAMIC CAPACITOR	CKDYX473M25
	C24	ELECTR. CAPACITOR	CEAS4R7M50
	C25	CERAMIC CAPACITOR	CKDYF472Z50
	C26	CERAMIC CAPACITOR	CKDYF103Z50
	C27	ELECTROLYTIC CAPACIT	CEAS471M25
	C28	ELECTROLYTIC CAPACIT	CEAS6R8M50
	C29	ELECTR. CAPACITOR	CEAS221M16
	C30	CERAMIC CAPACITOR	CKDYX473M25
	C31	CERAMIC CAPACITOR	CKDYF103Z50
	C32	CERAMIC CAPACITOR	CKDYF472Z50
	C33	ELECTR. CAPACITOR	CEAS101M25
	C34	CERAMIC CAPACITOR	CKDYB102K50
	C35	CERAMIC CAPACITOR	CKPUYY103M16
	C36	CERAMIC CAPACITOR	CCDLH220J50
	C37	CERAMIC CAPACITOR	CCDLH560J50
	C38	CERAMIC CAPACITOR	CCDSH100D50
	C39	CERAMIC CAPACITOR	CCDLH120J50
	C40	CERAMIC CAPACITOR	CCDCH050C50
	C41	CERAMIC CAPACITOR	CKDYB102K50
	C42	CERAMIC CAPACITOR	CKDYF103Z50
	C43	ELECTR. CAPACITOR	CEAS470M25
	C44	CERAMIC CAPACITOR	CKDYF103Z50
	C45	CERAMIC CAPACITOR	CKCYX473M25
	C46	CERAMIC CAPACITOR	CKDYB102K50
	C47	ELECTR. CAPACITOR	CEAS101M25
	C48	CERAMIC CAPACITOR	CKDYX473M25
	C49	CERAMIC CAPACITOR	CKPUYF473Z16
	C50	CERAMIC CAPACITOR	CKDYB102K50
	C51	ELECTR. CAPACITOR	CEAS470M25
	C52	CERAMIC CAPACITOR	CCDCH040C50
	C53	CERAMIC CAPACITOR	CKPUYY103M16
	C54	CERAMIC CAPACITOR	CKDYF103Z50
	C55	CERAMIC CAPACITOR	CKDYB102K50
	C56	CERAMIC CAPACITOR	CCDCH150J50
	C58	CERAMIC CAPACITOR	CKDYB102K50
	C59	CERAMIC CAPACITOR	CCDCH050C50
	C60	CERAMIC CAPACITOR	CCDCH040C50
	C65	CERAMIC CAPACITOR	CCDCH020C50
	C66	CERAMIC CAPACITOR	CKDYB102K50
	C67	CERAMIC CAPACITOR	CCDCH560J50
	C68	ELECTR. CAPACITOR	CEAS101M25
	C69	CERAMIC CAPACITOR	CKDYB102K50
	C70	CERAMIC CAPACITOR	CCDCH040C50
	C71	CERAMIC CAPACITOR	CCDCH020C50
	C72	CERAMIC CAPACITOR	CKDYB102K50
	C73	CERAMIC CAPACITOR	CCDCH040C50
	C74	CERAMIC CAPACITOR	CKPUYY103M16
	C75	CERAMIC CAPACITOR	CCDCH040C50
	C76	ELECTR. CAPACITOR	CEAS101M25
	C77	CERAMIC CAPACITOR	CCDCH020C50
	C78	CERAMIC CAPACITOR	CKDYB102K50
	C79	CERAMIC CAPACITOR	CCDCH090D50
	C80	CERAMIC CAPACITOR	CKDYB102K50
	C81	ELECTR. CAPACITOR	CEAS4R7M50
	C82	CERAMIC CAPACITOR	CKDYB102K50
	C83	CERAMIC CAPACITOR	CCDCH050C50
	C84	CERAMIC CAPACITOR	CCDCH020C50
	C85, 86	CERAMIC CAPACITOR	CKDYB102K50
	C87	CERAMIC CAPACITOR	CCDCH270J50
	C88	CERAMIC CAPACITOR	CCDSL221J50
	C89	CERAMIC CAPACITOR	CCDCH220J50
	C90	CERAMIC CAPACITOR	CKDYB102K50
	C91	ELECTROLYTIC CAPACIT	CEAS0R1M50
	C92	CERAMIC CAPACITOR	CKDYB471K50
	C93	ELECTR. CAPACITOR	CEAS2R2M50

Mark	No.	Description	Part No.
	C94	CERAMIC CAPACITOR	CKDYX153M16
	C95	CERAMIC CAPACITOR	CKDYB102K50
	C96	ELECTR. CAPACITOR	CEASR47M50
	C97	ELECTR. CAPACITOR	CEAS010M50
	C98	CERAMIC CAPACITOR	CKDYB103K50
	C99	ELECTR. CAPACITOR	CEASR15M50
	C100	ELECTR. CAPACITOR	CEASR47M50
	C101	ELECTR. CAPACITOR	CEAS470M25
	C102	ELECTR. CAPACITOR	CEAS100M50
	C103	CERAMIC CAPACITOR	CKDYF103Z50
	C104	CERAMIC CAPACITOR	CKPUYF473Z16
	C105, 106	CERAMIC CAPACITOR	CKDYF103Z50
	C107	ELECTROLYTIC CAPACIT	CEAS471M25
	C108	CERAMIC CAPACITOR	CCDCH221J50
	C110	ELECTR. CAPACITOR	CEASR47M50
	C111	CERAMIC CAPACITOR	CKDYF103Z50
	C112	CERAMIC CAPACITOR	CCDRH270J50
	C113	ELECTR. CAPACITOR	CEASR47M50
	C114, 115	CERAMIC CAPACITOR	CKDYB102K50
	C116	CERAMIC CAPACITOR	CKDYF103Z50
	C117	CERAMIC CAPACITOR	CKDYB102K50
	C118	ELECTR. CAPACITOR	CEAS010M50
	C119	ELECTR. CAPACITOR	CEAS470M25
	C120	ELECTR. CAPACITOR	CEAS100M50
	C121	ELECTR. CAPACITOR	CEAS470M25
	C122	ELECTR. CAPACITOR	CEANP2R2M50
	C123	CERAMIC CAPACITOR	CKDYF472Z50
	C124	CERAMIC CAPACITOR	CCDCH050C50
	C125	ELECTR. CAPACITOR	CEANP2R2M50
	C126	CERAMIC CAPACITOR	CKPUYF473Z16
	C127	CERAMIC CAPACITOR	CKDYF473Z50
	C129	ELECTR. CAPACITOR	CEAS470M25
	C130	CERAMIC CAPACITOR	CCDSL390J50
	C131	CERAMIC CAPACITOR	CKPUYB102K50
	C132	CERAMIC CAPACITOR	CKDYF103Z50
	C134, 135	CERAMIC CAPACITOR	CKDYF103Z50
	C136	CERAMIC CAPACITOR	CKDYB103K50
	C137	CERAMIC CAPACITOR	CKDYX104M25
	C138-140	ELECTR. CAPACITOR	CEAS470M25
	C141, 142	CERAMIC CAPACITOR	CKDYF103Z50
	C143	CERAMIC CAPACITOR	CKDYF472Z50
	C144	CERAMIC CAPACITOR	CCCSL151J50
	C145	CERAMIC CAPACITOR	CCDSL101J50
	C146-148	CERAMIC CAPACITOR	CKDYF103Z50
	C149	ELECTR. CAPACITOR	CEAS470M25
	C150	CERAMIC CAPACITOR	CCDCH030C50
	C151-153	CERAMIC CAPACITOR	CKDYF103Z50
	C156	CERAMIC CAPACITOR	CCCSL150J50
	C157	CERAMIC RESISTOR	CCCCH560J50
	C158, 159	CERAMIC CAPACITOR	CKDYF103Z50
	C160	CERAMIC CAPACITOR	CKPUYY103M16
	C161	CERAMIC CAPACITOR	CKDYF103Z50
	C162	CERAMIC CAPACITOR	CCDSL221J50
	C163	CERAMIC CAPACITOR	CCCSL820J50
	C201	CERAMIC CAPACITOR	CKCYX104M25
	C202	CERAMIC CAPACITOR	CCCCH221J50

Mark	No.	Description	Part No.
	C203	ELECTR. CAPACITOR	CEAS101M10
	C204	CERAMIC CAPACITOR	CKCYX104M25
	C205	CERAMIC CAPACITOR	CKCYF472Z50
	C206	CERAMIC CAPACITOR	CKCYF473Z50
	C207, 208	CERAMIC CAPACITOR	CCDCH150J50
	C209	ELECTR. CAPACITOR	CEAS101M10
	C210	CERAMIC CAPACITOR	CKCYX104M25
	C211	CERAMIC CAPACITOR	CKCYB561K50
	C212	MYLAR FILM CAPACITOR	CQMA562K50
	C213	ELECTR. CAPACITOR	CEASR33M50
	C214	CERAMIC CAPACITOR	CCCSL181J50
	C215	ELECTR. CAPACITOR	CEAS101M10
	C216	CERAMIC CAPACITOR	CKCYB103K50
	C217	ELECTR. CAPACITOR	CEAS330M25
	C218	CERAMIC CAPACITOR	CKCYX104M25
	C219	CERAMIC CAPACITOR	CKCYB103K50
	C220	ELECTR. CAPACITOR	CEAS101M10
	C221	ELECTR. CAPACITOR	CEAS100M50
	C222	ELECTR. CAPACITOR	CEAS100M50
	C223, 224	CERAMIC CAPACITOR	CKCYB102K50
	C225	ELECTR. CAPACITOR	CEAS220M16
	C226	ELECTR. CAPACITOR	CEAS101M25
	C227	ELECTR. CAPACITOR	CEAS010M50
	C228	MYLAR FILM CAPACITOR	CQMA392J50
	C229	MYLAR FILM CAPACITOR	CQMA822J50
	C230	MYLAR FILM CAPACITOR	CQMA471J50
	C231	MYLAR FILM CAPACITOR	CQMA682J50
	C232	CERAMIC CAPACITOR	CKCYB331K50
	C233	MYLAR FILM CAPACITOR	CQMA223J50
	C234	CERAMIC CAPACITOR	CCCCH560J50
	C235, 236	ELECTR. CAPACITOR	CEAS010M50
	C237	MYLAR FILM CAPACITOR	CQMA392J50
	C238	MYLAR FILM CAPACITOR	CQMA822J50
	C239	MYLAR FILM CAPACITOR	CQMA471J50
	C240	MYLAR FILM CAPACITOR	CQMA682J50
	C241	CERAMIC CAPACITOR	CKCYB331K50
	C242	MYLAR FILM CAPACITOR	CQMA223J50
	C243	CERAMIC CAPACITOR	CCCCH560J50
	C244	ELECTR. CAPACITOR	CEAS010M50
	C245	CERAMIC CAPACITOR	CKCYF473Z50
	C246	ELECTR. CAPACITOR	CEAS100M50
	C247	CERAMIC CAPACITOR	CCCCH680J50
	C250-253	CERAMIC CAPACITOR	CKCYF473Z50
	C254-257	CERAMIC CAPACITOR	CKCYX104M25
	C258	ELECTR. CAPACITOR	CEAS221M16
	C259	CERAMIC CAPACITOR	CKCYX104M25
	C261	CERAMIC CAPACITOR	CCDCH560J50
	C262	CERAMIC CAPACITOR	CKCYB103K50
	C2000	ELECTR. CAPACITOR	CEAS100M50
	C2001	CERAMIC CAPACITOR	CKCYF103Z50
	C2002	CERAMIC CAPACITOR	CCCCH390J50

RESISTORS

	VR11	VR(22kΩ)	VRTS6VS223
	VR13	VR(4.7kΩ)	VRTS6VS472
	VR14	VR(1kΩ)	VRTS6VS102
	VR17	VR(100kΩ)	VRTS6VS104
	R14	METAL OXIDE RESISTOR	RS1LMF221J

Mark	No.	Description	Part No.
	R15	CARBON FILM RESISTOR	RD1/2PMFL271J
	R24	METAL OXIDE RESISTOR	RS1LMF3R3J
	R25	CARBON FILM RESISTOR	RD1/4PMFL100J
	R27, 45	CARBON FILM RESISTOR	RD1/4PMFL101J
	R57, 70	CARBON FILM RESISTOR	RD1/4PMFL101J
	R126	CARBON FILM RESISTOR	RD1/2PMFL330J
	R171	CARBON FILM RESISTOR	RD1/4PMFL271J
		OTHER RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X12	CERAMIC RESONATOR	ASS1063
	X202	CRYSTAL RESONATOR	ASS1035
		PLUG CORD	ADE-082
		TV FRONT END	AXF1053

I/O-TEXT ASSEMBLY (AWZ3997)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC600, 601	LOGIC IC	TC4066BP
	IC602	T. TXT V PROCESSOR	SAA5191
	IC603	TELETEXT IC	SAA9042P/A
	IC604	MEMORY IC	MB81464-12
	IC1001	AV SELECTOR IC	PA0040
	IC1501	OP AMP IC	RC4558DXP
	Q600-612	TRANSISTOR	2SC1740S
	Q614	TRANSISTOR	2SC1740S
	Q615, 616	TRANSISTOR	2SA933S
	Q617, 618	TRANSISTOR	2SC1740S
	Q1001-1003	TRANSISTOR	2SC1740S
	Q1004	TRANSISTOR	2SC3327
	Q1005-1009	TRANSISTOR	2SC1740S
	Q1011	TRANSISTOR	2SC1740S
	Q1014, 1015	TRANSISTOR	2SC3327
	Q1016	TRANSISTOR	RN1201
	Q1017, 1018	TRANSISTOR	2SC3327
	D600-616	DIODE	1SS252
	D617	ZENER DIODE	RD4. 3ESB
	D1001-1004	DIODE	1SS252

COILS

Mark	No.	Description	Part No.
	L600	AXIAL INDUCTOR	LAU150K
	L601-604	AXIAL INDUCTOR	LAU6R8K
	L605	COIL	ATC1029
	L1017	AXIAL INDUCTOR	LAU220K

CAPACITORS

Mark	No.	Description	Part No.
	C600	CERAMIC CAPACITOR	CKCYX104M25
	C601	ELECTR. CAPACITOR	CEAS470M16
	C602	CERAMIC CAPACITOR	CKCYX104M25
	C603	ELECTR. CAPACITOR	CEAS220M16
	C604	CERAMIC CAPACITOR	CKCYX104M25
	C605	ELECTR. CAPACITOR	CEAS470M16
	C606	MYLAR FILM CAPACITOR	CQMA154J50
	C607	CERAMIC CAPACITOR	CCCCH270J50
	C608	ELECTR. CAPACITOR	CEAS100M50
	C609	CERAMIC CAPACITOR	CCCCH150J50
	C610	CERAMIC CAPACITOR	CCCCH101J50
	C611	CERAMIC CAPACITOR	CCCCH271J50
	C612	MYLAR FILM CAPACITOR	CQMA223J50
	C613	MYLAR FILM CAPACITOR	CQMA471J50
	C614	CERAMIC CAPACITOR	CKCYB102K50
	C615	CERAMIC CAPACITOR	CCCCH150J50
	C616	CERAMIC CAPACITOR	CKCYB331K50
	C617	CERAMIC CAPACITOR	CCCCH070D50
	C618	MYLAR FILM CAPACITOR	CQMA102J50
	C619	CERAMIC CAPACITOR	CCCCH221J50
	C620	MYLAR FILM CAPACITOR	CQMA683J50
	C621	ELECTR. CAPACITOR	CEANP2R2M50
	C622	CERAMIC CAPACITOR	CKCYX104M25
	C623	CERAMIC CAPACITOR	CKCYX223M25
	C624	CERAMIC CAPACITOR	CKCYB103K50
	C625	ELECTR. CAPACITOR	CEAS101M16
	C626	MYLAR FILM CAPACITOR	CQMA473J50
	C627	MYLAR FILM CAPACITOR	CQMA103J50
	C628	ELECTR. CAPACITOR	CEAS4R7M50
	C629, 630	CERAMIC CAPACITOR	CCCCH101J50
	C631	CERAMIC CAPACITOR	CKCYX104M25
	C632, 633	ELECTR. CAPACITOR	CEAS220M16
	C634	CERAMIC CAPACITOR	CKCYX104M25
	C635	ELECTR. CAPACITOR	CEAS010M50
	C636	CERAMIC CAPACITOR	CCCCH270J50
	C637	ELECTROLYTIC CAPACIT	CEANP100M50
	C638	ELECTR. CAPACITOR	CEAS100M25
	C639	MYLAR FILM CAPACITOR	CQMA104J50
	C640	MYLAR FILM CAPACITOR	CQMA103J50
	C641	CERAMIC CAPACITOR	CCCCH101J50
	C642	CERAMIC CAPACITOR	CCCCH560J50
	C643	CERAMIC CAPACITOR	CCCCH220J50
	C1002	CERAMIC CAPACITOR	CKCYF103Z50
	C1003, 1004	ELECTR. CAPACITOR	CEJA010M50
	C1012, 1013	ELECTR. CAPACITOR	CEJA010M50
	C1016, 1017	ELECTR. CAPACITOR	CEJA010M50
	C1018, 1019	ELECTR. CAPACITOR	CEAS2R2M50
	C1020	ELECTR. CAPACITOR	CEAS102M10
	C1023	ELECTR. CAPACITOR	CEAS222M16
	C1024	CERAMIC CAPACITOR	CKCYB103K50
	C1025	ELECTR. CAPACITOR	CEAS220M25
	C1026	ELECTR. CAPACITOR	CEAS101M16
	C1027	ELECTR. CAPACITOR	CEAS100M25
	C1028, 1029	ELECTR. CAPACITOR	CEAS010M50
	C1030	CERAMIC CAPACITOR	CKCYB103K50
	C1031, 1032	ELECTR. CAPACITOR	CEAS2R2M50
	C1033-1035	CERAMIC CAPACITOR	CKCYB103K50
	C1036	ELECTR. CAPACITOR	CEAS470M25
	C1037	CERAMIC CAPACITOR	CKCYB103K50
	C1039	ELECTROLYTIC CAPACIT	CEJA470M16
	C1040	ELECTR. CAPACITOR	CEAS102M10
	C1041, 1042	ELECTR. CAPACITOR	CEAS2R2M50
	C1043	CERAMIC CAPACITOR	CKPUYY103M16
	C1044, 1046	ELECTR. CAPACITOR	CEAS470M25
	C1047	ELECTR. CAPACITOR	CEAS102M10
	C1048	ELECTR. CAPACITOR	CEAS010M50
	C1049	ELECTR. CAPACITOR	CEJA010M50
	C1501, 1502	ELECTR. CAPACITOR	CEAS4R7M50
	C1503	CERAMIC CAPACITOR	CKCYB103K50
	C1504	ELECTR. CAPACITOR	CEAS470M25
	C1505, 1506	ELECTR. CAPACITOR	CEAS4R7M50
	C1507	ELECTR. CAPACITOR	CEAS470M16

RESISTORS

Mark	No.	Description	Part No.
	R600	METAL OXIDE RESISTOR	RS1LMF150J
	R1060	CARBON FILM RESISTOR	RD1/4PMFL100J
	R1064, 1065	CARBON FILM RESISTOR	RD1/4PM121J
	R1085	CARBON FILM RESISTOR	RD1/4PM221J
	R1102	CARBON FILM RESISTOR	RD1/4PM221J
		OTHER RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X600	CRYSTAL RESONATOR	ASS1049
	CN1008, 1010	PLUG 14-P	AKM1048
	CN1012	PLUG 12-P	AKM-079

SUB TEXT ASSEMBLY (AWZ3998)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC700		P8032AH
	IC701		PDN001A9
	IC703	LOGIC IC	TC74HC373AP
	Q700	TRANSISTOR	2SC1740S
	D704	ZENER DIODE	RD3.6ESB

CAPACITORS

Mark	No.	Description	Part No.
	C700	ELECTR. CAPACITOR	CEAS220M16
	C701	CERAMIC CAPACITOR	CKCYX104M25
	C702	ELECTR. CAPACITOR	CEAS470M16
	C703	CERAMIC CAPACITOR	CKCYX104M25
	C704	CERAMIC CAPACITOR	CKPUYF223Z25
	C705, 706	CERAMIC CAPACITOR	CCCCH270J50

RESISTORS

Mark	No.	Description	Part No.
		ALL RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X700	CERAMIC RESONATOR	ASS1034
	CN700	CONNECTOR(7P)	KPC7

Y-C SEPARATION ASSEMBLY (AWZ3999)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC901	LOGIC IC	TC4052BP
	Q901	TRANSISTOR	2SC1740S
	Q902	TRANSISTOR	2SA933S
	Q903, 904	TRANSISTOR	2SC1740S
	Q905	TRANSISTOR	2SA933S
	Q906	TRANSISTOR	2SC1740S
	Q907-909	TRANSISTOR	2SA933S
	Q910-916	TRANSISTOR	2SC1740S
	Q971, 972	TRANSISTOR	2SC1740S

COILS

Mark	No.	Description	Part No.
	L901	AXIAL INDUCTOR	LAU470K
	L902	TRAP COIL	ATG1008
	L903	AXIAL INDUCTOR	LAU270K
	L904, 905	AXIAL INDUCTOR	LAU470K
	L906	AXIAL INDUCTOR	LAU820K
	L907	AXIAL INDUCTOR	LAU560K
	L908	AXIAL INDUCTOR	LAU150K
	L909	AXIAL INDUCTOR	LAU3R9K
	L910	AXIAL INDUCTOR	LAU8R2K
	L911	AXIAL INDUCTOR	LAU1R8M
	L912, 913	AXIAL INDUCTOR	LAU3R9K
	L914	AXIAL INDUCTOR	LAU8R2K
	L915	AXIAL INDUCTOR	ATH1013
	L916	TUNING COIL	ATG1006
	L971	AXIAL INDUCTOR	LAU220K
	L972	AXIAL INDUCTOR	LAU100K

CAPACITORS

Mark	No.	Description	Part No.
	C901	ELECTR. CAPACITOR	CEAS470M50
	C902	CERAMIC CAPACITOR	CCCCH270J50
	C903	CERAMIC CAPACITOR	CCCCH560J50
	C904, 905	CERAMIC CAPACITOR	CCCCH181J50
	C906	CERAMIC CAPACITOR	CKCYB102K50
	C907	CERAMIC CAPACITOR	CCCCH220J50
	C908	CERAMIC CAPACITOR	CCCCH330J50
	C909	CERAMIC CAPACITOR	CCCCH151J50
	C910	ELECTR. CAPACITOR	CEAS101M10
	C911	CERAMIC CAPACITOR	CCCCH221J50
	C912	CERAMIC CAPACITOR	CCCCH151J50
	C913	ELECTR. CAPACITOR	CEAS470M50
	C914	CERAMIC CAPACITOR	CCCCH151J50
	C915	CERAMIC CAPACITOR	CCCCH221J50
	C916, 917	CERAMIC CAPACITOR	CKCYB103K50
	C918	CERAMIC CAPACITOR	CKCYF103Z50
	C919	CERAMIC CAPACITOR	CKCYB103K50
	C920, 921	ELECTR. CAPACITOR	CEAS330M16
	C922	ELECTR. CAPACITOR	CEAS470M16
	C923	CERAMIC CAPACITOR	CKCYB103K50
	C924	ELECTR. CAPACITOR	CEAS470M16
	C925	CERAMIC CAPACITOR	CKCYB103K50
	C971	ELECTR. CAPACITOR	CEAS101M10
	C972	CERAMIC CAPACITOR	CCCCH390J50
	C973	CERAMIC CAPACITOR	CCCCH330J50
	C974	ELECTR. CAPACITOR	CEAS100M50

RESISTORS

Mark	No.	Description	Part No.
	VR902	VR (1kΩ)	ACP1040
		ALL RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN901	CONNECTOR(9P)	KPC9
	DL901	GLASS DELAY LINE	ATN1011

EXT. SP ASSEMBLY (AWZ4000)

SWITCH

Mark	No.	Description	Part No.
	S251	SLIDE SWITCH (SPEAKER SELECTOR)	ASH1001

FILTERS AND COILS

Mark	No.	Description	Part No.
	L251, 252	LINE FILTER	ATF1090
	L253-256	FERRITE BEAD	ATX1008

CAPACITORS

Mark	No.	Description	Part No.
	C251	CERAMIC CAPACITOR	CCCSL221J50
	C252, 253	CERAMIC CAPACITOR	CKCYF473Z50
	C254	CERAMIC CAPACITOR	CCCSL221J50
	C255, 256	CERAMIC CAPACITOR	CKCYB332K50
	C257, 258	CERAMIC CAPACITOR	CKCYF473Z50

RESISTORS

Mark	No.	Description	Part No.
	R251-254	CARBON FILM RESISTOR	RD1/4PMFL100J
	R255	CARBONFILM RESISTER	RD1/8PM100J

OTHERS

Mark	No.	Description	Part No.
	CN251	JUMPER CONNECTOR 6-P	KPC6
		SPEAKER TERMINAL 4-P	AKE-109

SOUND TRAP ASSEMBLY (AWZ4001)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q23	N-FET	2SK246
	Q24	P-FET	2SJ103
	Q27	TRANSISTOR	2SC1740S
	Q29	N-FET	2SK246
	Q30	TRANSISTOR	2SC1740S
	Q33	TRANSISTOR	2SA933S

FILTERS AND COILS

Mark	No.	Description	Part No.
	F14	CERAMIC TRAP	ATF-114
	F15	CERAMIC FILTER	ATF-172
	F16	CERAMIC FILTER	ATF1054
	F17	CERAMIC FILTER	ATF-174
	L24	AXIAL INDUCTOR	LAU100K
	L25	AXIAL INDUCTOR	LAU2R2K
	L26	AXIAL INDUCTOR	LAU4R7K
	L27	AXIAL INDUCTOR	LAU3R3K

CAPACITORS

Mark	No.	Description	Part No.
	C61	ELECTR. CAPACITOR	CEAS100M50
	C154	CERAMIC CAPACITOR	CKCYB103K50
	C155	ELECTROLYTIC CAPACIT	CEJA220M16

RESISTORS

Mark	No.	Description	Part No.
		ALL RESISTORS	RD1/8PM□□□J

FRONT ASSEMBLY (AWZ4002)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC851	MCU	PD5136
	Q852-854	TRANSISTOR	2SC1740S
	D851	ZENER DIODE	RD3. 0ESB
	D852-855	DIODE	1SS252

SWITCH

Mark	No.	Description	Part No.
	S851-866	TACT SWITCH	ASG1034

[POWER, PRESET MENU (ON/OFF, SET, SELECT/ADJ +, -)
FINE TUNE, TV SYSTEM, FACTORY ADJ, DPO, →← /AV
MEM, ⊿ (+, -), CH-PR (+, -), CH/PR, ⇤]

CAPACITORS

Mark	No.	Description	Part No.
	C851	AUDIO FILM CAPACITOR	CFTXA104J50
	C852, 853	CERAMIC CAPACITOR	CCCCH221J50
	C854	ELECTR. CAPACITOR	CEAS2R2M50
	C855	CERAMIC CAPACITOR	CGMYX103M16
	C866	CERAMIC CAPACITOR	CKMYF472Z50
	C869	ELECTR. CAPACITOR	CEAS101M10

RESISTORS

Mark	No.	Description	Part No.
	R870	CARBON FILM RESISTOR	RD1/2PMFL820J
	R876	METAL OXIDE RESISTOR	RS1LMF331J
		OTHER RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X851	CERAMIC OSCILLATOR	ASS1043

DPO ASSEMBLY (AWZ4003)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q851	TRANSISTOR	2SC1740S
	PC851	CDS	U5C-08SC
	D856	LED (RED, GREEN)	AEL-427

CAPACITORS

Mark	No.	Description	Part No.
	C867	ELECTROLYTIC CAPACIT	CEJA330M16
	C868	ELECTROLYTIC CAPACIT	CEJA100M25
	C870	CERAMIC CAPACITOR	CCMSL121J50

RESISTORS

Mark	No.	Description	Part No.
	VR851	VR (47kΩ)	ACP1045
		OTHER RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
		DPO HOLDER	AMR2294
		REMOTE RECEIVER UNIT	AXX1010

CONVERGENCE ASSEMBLY (AWZ4004)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC701	REGULATOR IC	NJM78M05FAS
	IC702	REGULATOR IC	UPC78L12J
	IC703	REGULATOR IC	NJM79M05FA
	IC704	REGULATOR IC	NJM79L15A
	IC705	TV IC	PA0036
	IC706	LOGIC IC	TC4066BP
	IC707-709	OP AMP	M5238LF
	IC710	TV HIC	STK4277A-SL
	IC711	LOGIC IC	TC4066BP
	Q751	TRANSISTOR	2SA933S
	Q752, 756	TRANSISTOR	2SC1740S
	Q757	TRANSISTOR	2SA933S
	Q758-760	TRANSISTOR	2SC1740S
	Q761	TRANSISTOR	2SA933S
	Q762-764	TRANSISTOR	2SC1740S
	Q765	TRANSISTOR	2SA933S
	Q766	TRANSISTOR	2SD1276A
	Q767	TRANSISTOR	2SB950A
	Q768	TRANSISTOR	2SA1306
	Q769	TRANSISTOR	2SC3298
	D701	DIODE	1SS252
	D702	ZENER DIODE	RD8. 2ESB
	D703-705	DIODE	1SS252
	D706	ZENER DIODE	RD5. 6ESB3
	D708	DIODE	1SS252
	D709	ZENER DIODE	RD5. 6ESB3
	D710, 711	DIODE	1SS252
	D712	ZENER DIODE	HZS12BL
	D713	DIODE	1SS252
	D714, 715	ZENER DIODE	UZ-27BSB
	D716-719	DIODE	1SS252
	D720	ZENER DIODE	UZ-27BSB
	D721, 722	DIODE	11DF2FD

Mark	No.	Description	Part No.
	D723	ZENER DIODE	UZ-27BSB
	D724	DIODE	11E2
	D725	ZENER DIODE	UZ-27BSB
	D726	DIODE	11E2
	D727-736	ZENER DIODE	UZ-27BSB
	D737, 738	DIODE	1SS252

CAPACITORS

Mark	No.	Description	Part No.
	C801, 802	ELECTROLYTIC CAPACIT	CEHAQ330M35
	C803	ELECTR. CAPACITOR	CEHAQ010M50
	C804, 805	ELECTROLYTIC CAPACIT	CEHAQ101M10
	C806	MYLAR FILM CAPACITOR	CQMA821J50
	C808	ELECTR. CAPACITOR	CEAS010M50
	C809	ELECTR. CAPACITOR	CEAS100M50
	C810	ELECTR. CAPACITOR	CEHAQ010M50
	C811	CERAMIC CAPACITOR	CKCYF472Z50
	C812	MYLAR FILM CAPACITOR	CQMA124J50
	C813	MYLAR FILM CAPACITOR	CQMA683J50
	C814, 815	ELECTROLYTIC CAPACIT	CEHAQ330M35
	C817	CERAMIC CAPACITOR	CCCCH090D50
	C818	ELECTR. CAPACITOR	CEAS100M50
	C819-821	CERAMIC CAPACITOR	CKCYF222Z50
	C823	ELECTR. CAPACITOR	CEHAQ010M50
	C824	MYLAR FILM CAPACITOR	CQMA393J50
	C825, 826	CERAMIC CAPACITOR	CKCYF473Z50
	C827	ELECTR. CAPACITOR	CEHAQ010M50
	C828	CERAMIC CAPACITOR	CKCYF473Z50
	C829	ELECTR. CAPACITOR	CEAS100M50
	C830	MYLAR FILM CAPACITOR	CQMA332J50
	C831	MYLAR FILM CAPACITOR	CQMA224J50
	C832, 833	ELECTR. CAPACITOR	CEAS2R2M50
	C834	PL. STYRENE CAPACITOR	CQSA152J50
	C835	MYLAR FILM CAPACITOR	CQMA681J50
	C836	PL. STYRENE CAPACITOR	CQSA331J50
	C837, 838	CERAMIC CAPACITOR	CGMYX103M16
	C839	MYLAR FILM CAPACITOR	CQMA102J50
	C840, 841	ELECTROLYTIC CAPACIT	CEAS102M6
	C842	ELECTR. CAPACITOR	CEANP010M50
	C843	ELECTR. CAPACITOR	CEAS101M25
	C844	CERAMIC CAPACITOR	CKCYF473Z50
	C845	ELECTR. CAPACITOR	CEAS101M16
	C846	ELECTR. CAPACITOR	CEAS470M16
	C847, 848	ELECTR. CAPACITOR	CEAS100M50
	C849-852	CERAMIC CAPACITOR	CKCYX223M25
	C853	CERAMIC CAPACITOR	CKCYF103Z50
	C854	CERAMIC CAPACITOR	CKCYF473Z50
	C855	ELECTR. CAPACITOR	CEAS470M16
	C856	CERAMIC CAPACITOR	CKCYF473Z50
	C857	ELECTR. CAPACITOR	CEAS221M10
	C858	CERAMIC CAPACITOR	CKCYF103Z50
	C859, 860	ELECTR. CAPACITOR	CEHAQ100M50
	C861	CERAMIC CAPACITOR	CKCYF103Z50
	C862	ELECTR. CAPACITOR	CEAS221M10
	C863	ELECTR. CAPACITOR	CEHAQ221M35
	C864	CERAMIC CAPACITOR	CCMSL470J50
	C865-868	CERAMIC CAPACITOR	CKCYF103Z50
	C869	ELECTR. CAPACITOR	CEHAQ221M35
	C870	ELECTR. CAPACITOR	CEAS221M10
	C871, 872	CERAMIC CAPACITOR	CKCYF473Z50
	C873	ELECTR. CAPACITOR	CEAS221M10
	C874, 875	ELECTROLYTIC CAPACIT	CEHAQ471M35
	C876	ELECTROLYTIC CAPACIT	CEHAQ221M50
	C877	ELECTR. CAPACITOR	CEAS221M10
	C878	ELECTROLYTIC CAPACIT	CEHAQ221M50
	C879	CERAMIC CAPACITOR	CCMSL470J50
	C880	CERAMIC CAPACITOR	CKCYF473Z50
	C881	ELECTR. CAPACITOR	CEAS221M10
	C882, 883	CERAMIC CAPACITOR	CKCYF473Z50
	C884, 885	ELECTR. CAPACITOR	CEAS221M10
	C886	CERAMIC CAPACITOR	CCMSL470J50
	C887, 888	ELECTR. CAPACITOR	CEAS221M10
	C889	CERAMIC CAPACITOR	CCMSL470J50
	C890-892	CERAMIC CAPACITOR	CKCYF473Z50
	C893	CERAMIC CAPACITOR	CCMSL470J50
	C894, 895	CERAMIC CAPACITOR	CKCYF222Z50
	C896	MYLAR FILM CAPACITOR	CQMA103J50

RESISTORS

Mark	No.	Description	Part No.
	VR701	VR (22kΩ)	ACP1044
	VR702	VR (47kΩ)	ACP1045
	VR704	VR (220kΩ)	ACP1047
	VR705	VR (47kΩ)	ACP1045
	VR706-709	VR (4.7kΩ)	ACP1042
	VR710	VR (22kΩ)	ACP1044
	VR711-748	VR (4.7kΩ)	ACP1042
	VR749	VR (22kΩ)	ACP1044
	VR750	VR (4.7kΩ)	VRTS6VS472
	R101	METAL OXIDE RESISTOR	RS1LMF181J
	R102	METAL OXIDE RESISTOR	RS3LMF271J
	R117	CARBON FILM RESISTOR	RD1/4PM103J
	R126	RESISTOR(4.7Ω, 10W)	RT10PD4R7K
	R128	METAL OXIDE RESISTOR	RS1LMF680J
	R129	METAL OXIDE RESISTOR	RS3LMF271J
	R132	RESISTOR(4.7Ω, 10W)	RT10PD4R7K
	R147-149	CARBON FILM RESISTOR	RD1/4PMF100J
	R150	CARBON FILM RESISTOR	RD1/4PMFL181J
	R245, 246	RESISTOR(75Ω, 7W)	ACN1084
	R377-381	METAL OXIDE RESISTOR	RS2LMF3R3J
	R386	METALFILM RESISTER	RN1/4PC3301F
		OTHER RESISTORS	RD1/8PM□□□J

☆ HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC591, 592		RC4558DXP
	Q591, 592	TRANSISTOR	2SC2705
	Q593	TRANSISTOR	2SC1740S
	D591, 592	DIODE	1SS252
	D593	ZENER DIODE	RD5.1ESB
	D594	DIODE	1SS252

CAPACITORS

Mark	No.	Description	Part No.
	C651	CERAMIC CAPACITOR	CKCYF473Z50
	C652, 653	ELECTR. CAPACITOR	CEAS010M50
	C654	CERAMIC CAPACITOR	CKCYB472K50
	C655	CERAMIC CAPACITOR	CCCSL101K500
	C656	CERAMIC CAPACITOR	CKCYF473Z50

Mark	No.	Description	Part No.
	C661	CERAMIC CAPACITOR	CKCYB222K50
	C662, 663	MYLAR FILM CAPACITOR	CQMA102J50
	C664	CERAMIC CAPACITOR	CCCSL101K500
	C665	CERAMIC CAPACITOR	CKCYF473Z50
	C666	CERAMIC CAPACITOR	CKCYF103Z50
	C667	ELECTR. CAPACITOR	CEAS100M25

RESISTORS

Mark	No.	Description	Part No.
	R851	CARBONFILM RESISTOR	RD1/2PM471J
	R852	CARBON FILM RESISTOR	RD1/2PM561J
×	R868	METALFILM RESISTER	
×	R869	METALFILM RESISTER	
×	R870	METALFILM RESISTER	
		OTHER RESISTOR	RD1/8PMS□□□J

AV1 ASSEMBLY (AWZ4006)

COILS

Mark	No.	Description	Part No.
	L1001, 1002	AXIAL INDUCTOR	LAU560J
	L1005, 1006	AXIAL INDUCTOR	LAU010J

CAPACITORS

Mark	No.	Description	Part No.
	C1001	ELECTR. CAPACITOR	CEAS220M25
	C1021, 1022	CERAMIC CAPACITOR	CKCYB103K50
	C1048	CERAMIC CAPACITOR	CKCYF473Z50

RESISTORS

Mark	No.	Description	Part No.
		ALL RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN1005	SOCKET 18-P	AKP-049
	CN1015	CONNECTOR	AKP1003

AV2 ASSEMBLY (AWZ4007)

COILS

Mark	No.	Description	Part No.
	L1003, 1004	AXIAL INDUCTOR	LAU560J
	L1007-1012	AXIAL INDUCTOR	LAU010J
	L1013-1016	AXIAL INDUCTOR	LAU560J

CAPACITORS

Mark	No.	Description	Part No.
	C1006	ELECTROLYTIC CAPACIT	CEJA220M25
	C1007	CERAMIC CAPACITOR	CKCYF103Z50
	C1008, 1009	ELECTR. CAPACITOR	CEJA010M50
	C1010	CERAMIC CAPACITOR	CKCYF103Z50
	C1011, 1014	ELECTR. CAPACITOR	CEAS220M25
	C1015	CERAMIC CAPACITOR	CKCYF103Z50
	C1049	CERAMIC CAPACITOR	CKCYF473Z50
	C1601-1606	CERAMIC CAPACITOR	CKDYF103Z50

RESISTORS

Mark	No.	Description	Part No.
		ALL RESISTORS	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN1007, 1009	SOCKET 14-P	AKP1056
	CN1011	SOCKET 12-P	AKP-047
	CN1016	CONNECTOR	AKP1003
	CN1501, 1502	DIN SOCKET(4P)	AKP1017
	CN1503	PIN JACK(11P)	AKB1030

DEFLECTION PROTECT ASSEMBLY (AWV1232)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q801-804	TRANSISTOR	2SA1145

CAPACITORS

Mark	No.	Description	Part No.
	C701	CERAMIC CAPACITOR	CKCYB103K50
	C702	CERAMIC CAPACITOR	CCCSL101K500
	C703	ELECTROLYTIC CAPACIT	CEHAQ330M16
	C704	CERAMIC CAPACITOR	CKCYB103K50
	C705	CERAMIC CAPACITOR	CCCSL101K500
	C706	ELECTROLYTIC CAPACIT	CEHAQ220M16
	C707	ELE. CAP. (33μ/160V)	ACH-370

RESISTORS

Mark	No.	Description	Part No.
	R904	METAL OXIDE RESISTOR	RS2PMF010J
	R912	METAL OXIDE RESISTOR	RS3PMFR68J
	R917	CARBON FILM RESISTOR	RD1/4PMFL470J
		OTHER RESISTORS	RD1/8PM□□□J

MICROCOMPUTER-SUB ASSEMBLY (AWV1245)

See page 226.

7. ADJUSTMENTS

- The SD - T5000 conforms to the TV standard systems, M, B/G, I, D/K, L and L', and the color systems, NTSC, NTSC4.43, PAL and SECAM.
  Differences in adjustments between systems will be clarified in the following text.
  When the unit is used with a system after being adjusted for another system, the picture and sound may become abnormal. In this case, readjust the unit for the current system.
- It is strongly recommended to adjust the unit with the screen facing east or west.
- Adjustment items are described as follows.

7.1 FACTORY ADJ MODE
7.2 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPAIRED
7.3 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPLACED
7.4 WHEN Y-C SEPARATION ASSEMBLY IS REPAIRED
7.5 WHEN Y-C SEPARATION ASSEMBLY IS REPLACED
7.6 WHEN VIDEO-AUDIO ASSEMBLY IS REPAIRED
7.7 WHEN VIDEO-AUDIO ASSEMBLY IS REPLACED
7.8 WHEN TUNER-NICAM ASSEMBLY IS REPAIRED
7.9 WHEN TUNER-NICAM ASSEMBLY IS REPLACED
7.10 WHEN AM-DEMOD ASSEMBLY IS REPAIRED
7.11 WHEN AM-DEMOD ASSEMBLY IS REPLACED
7.12 WHEN CONVERGENCE ASSEMBLY IS REPAIRED OR REPLACED
7.13 WHEN MICROCOMPUTER ASSEMBLY IS REPAIRED
7.14 WHEN MICROCOMPUTER ASSEMBLY IS REPLACED
7.15 WHEN I/O-TEXT ASSEMBLY IS REPAIRED
7.16 WHEN I/O-TEXT ASSEMBLY IS REPLACED
7.17 WHEN DPO ASSEMBLY IS REPAIRED
7.18 WHEN DPO ASSEMBLY IS REPLACED
7.19 WHEN DYNAMIC FOCUS ASSEMBLY IS REPAIRED OR REPLACED
7.20 WHEN HIGH VOLTAGE CONTROL ASSEMBLY IS REPAIRED OR REPLACED
7.21 WHEN R, G OR B CRT DRIVE ASSEMBLY IS REPAIRED OR REPLACED
7.22 WHEN CRT ASSEMBLY R, G OR B IS REPLACED
7.23 WHEN LENS ASSEMBLY IS REPLACED
7.24 WHEN OTHER ASSEMBLIES ARE REPAIRED OR REPLACED
7.25 DPO BASE SETTING
7.26 DPO SENSITIVITY ADJUSTMENT
7.27 ANODE VOLTAGE MEASURING METHOD

- These adjustment procedures are described separately for adjustments following assembly exchange and adjustments following repairs.
- When replacing the assemblies, always use recommended replacements.
- Symbols in parentheses next to the adjustment position ( ) indicate denotes the relevant assembly to be adjusted.

D :POWER SUPPLY-DEFLECTION assembly
VR1 :Focus variable resistor
V :VIDEO-AUDIO assembly
A :AM-DEMOD assembly
C :CONVERGENCE assembly
M :MICROCOMPUTER assembly
T :TUNER-NICAM assembly
IC :IC15 in the TUNER-NICAM assembly
Y :Y-C SEPARATION assembly
I :I/O-TEXT assembly

- The adjustment points and TP terminals on each assemblies are shown in Fig. 7-17 thru 7-21.

Fig. 7-17:
VIDEO-AUDIO assembly, Y-C SEPARATION assembly and POWER SUPPLY-DEFLECTION assembly.
Fig. 7-18:
MICROCOMPUTER assembly, I/O-TEXT assembly, TUNER-NICAM assembly and AM-DEMOD assembly.
Fig. 7-19:
R, G, B CRT DRIVE assemblies and deflection yoke.
Fig. 7-20:
Lens assemblies (Red, Green, Blue).
Fig. 7-21:
CONVERGENCE assembly, front panel, FRONT assembly and focus variable resistor.

- Set the input terminals at the rear panel as follows unless otherwise noted.
  VIDEO signal : AV4 VIDEO terminal
  AUDIO signal : AV4 AUDIO terminal
- Set the picture quality to the standard by remote control unit unless otherwise noted.

7.1 FACTORY ADJ mode

● On FACTORY ADJ mode

FACTORY ADJ mode is activated/deactivated by pressing the S858 switch through the center small hole on the front control section with a stick or equivalent. (See Fig. 7 - 21.)
This FACTORY ADJ mode consists of ADJUSTMENT RANGE mode and ADJUSTMENT OFFSET mode.
ADJUSTMENT RANGE mode is used to quickly check the variation of various picture and sound controls (COLOR, TINT, CONTR, BRITE, SHARP, BASS, TREBL, BALNC and CONVR) and ADJUSTMENT OFFSET mode is used to set the picture quality (for the PIONEER standard) when the user has defined the standard setting using the remote control.
When FACTORY ADJ mode is activated and an CNT-to-MIN-to-CNT or CNT-to-MAX-to-CNT operation is performed in ADJUSTMENT RANGE mode, all the AV memory values set by the user are cleared to "0" and the convergence position is reset to the center of the variable range. After deactivating the FACTORY ADJ mode, set the AV memory values and the convergence position again as required.

● How to use FACTORY ADJ mode

① ADJUSTMENT RANGE mode

When the S858 switch of the front control section (see Fig. 7 - 21) is pressed to activate the FACTORY ADJ mode, the screen shows ADJUSTMENT RANGE mode display as shown in Fig. 7 - 1 ①.
In this mode, the center (CNT), minimum (MIN) and maximum (MAX) points of the variable control ranges of the picture quality, sound quality and convergence position can be easily checked (without changing the current settings with the + ⊿ − keys).
To check, use the numeric keys on the remote control, which correspond to the picture and sound control functions as follows.

$\boxed{1}$: COLOR
$\boxed{2}$: TINT
$\boxed{3}$: CONTR
$\boxed{4}$: BRITE
$\boxed{5}$: SHARP
$\boxed{7}$: BASS
$\boxed{8}$: TREBL
$\boxed{9}$: BALNC
$\boxed{0}$: CONVR(Convergence)

For example, when checking the variation of TINT, press the $\boxed{2}$ key of the remote control. Each time you press the $\boxed{2}$ key, CNT, MIN and MAX points are displayed cyclically in sequence.
Operate the other keys in the same manner for the respective items. (When checking the picture and sound controls, use a signal whose variations are easily recognized.)

Note::

- $\boxed{9}$:When checking BALANC;
  CNT :For outputting both channels.
  MIN :For outputting R channel only.
  MAX :For outputting L channel only.
- $\boxed{0}$:When checking CONVR;
  CNT :For the center position.
  MIN :For shifting to the upper right.
  MAX :For shifting to the lower left.

② ADJUSTMENT OFFSET mode (PIONNER standard setting mode)

By pressing the MUTE key of the remote control, the mode changes from ADJUSTMENT RANGE mode to ADJUSTMENT OFFSET mode as shown in Fig. 7 - 1 ②.
The picture adjustment (COLOR, TINT, CONTR, BRITE, SHARP) set in this mode will be that to be selected as the standard setting (PIONEER standard) using the remote control unit.
To set, select the item to adjust with the designated key or the numeric keys ($\boxed{1}$ through $\boxed{5}$) and then adjust the selected item with the + ⊿ − keys according to the specified adjustment procedure. The reference set value is displayed on the lower right corner of the screen.

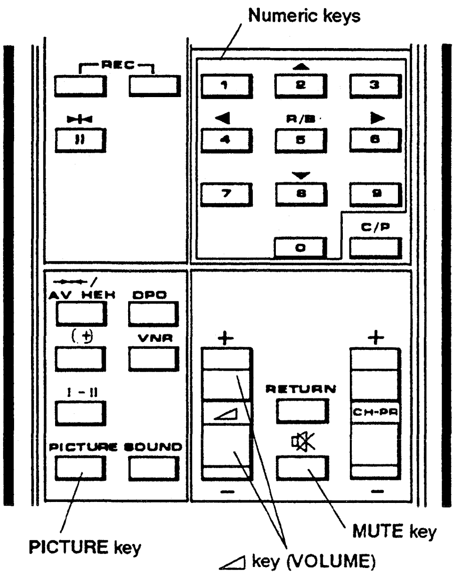
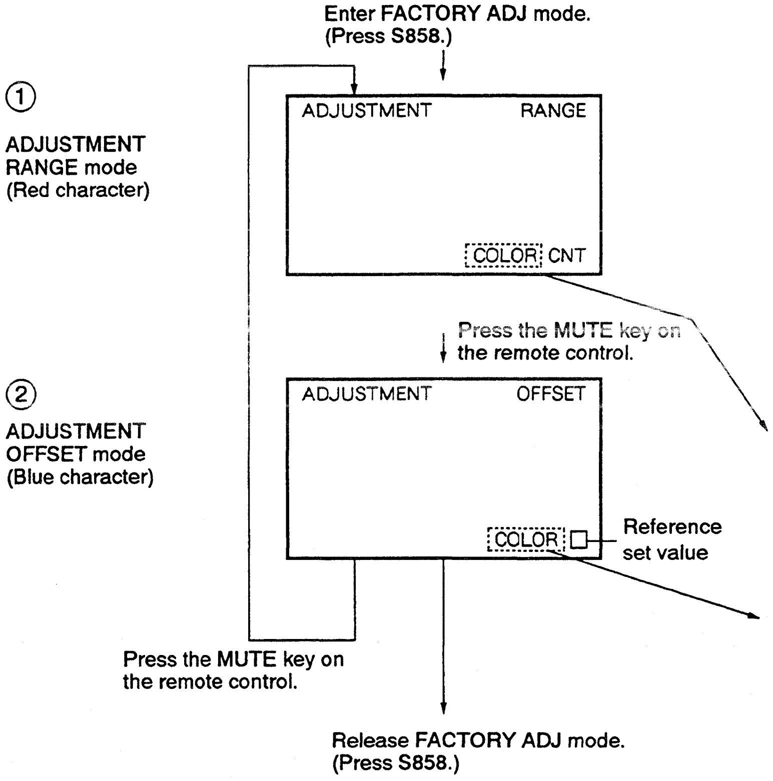

Numeric keys
REC
1
2
3
4
R/■
5
6
7
8
9
C/P
0
AV HEH
DPD
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
−
PICTURE key
MUTE key
◿ key (VOLUME)

Fig. 7-2
Key disposition of the remote control


Enter FACTORY ADJ mode.
(Press S858.)
①
ADJUSTMENT
RANGE mode
(Red character)
ADJUSTMENT RANGE
COLOR CNT
Press the MUTE key on the remote control.
②
ADJUSTMENT
OFFSET mode
(Blue character)
ADJUSTMENT OFFSET
COLOR ☐
Reference set value
Press the MUTE key on the remote control.
Release FACTORY ADJ mode.
(Press S858.)

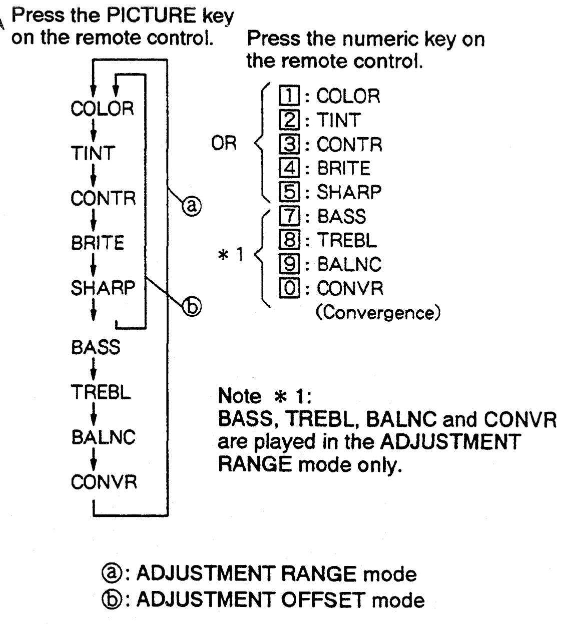

Press the PICTURE key on the remote control.
COLOR
TINT
CONTR
BRITE
SHARP
BASS
TREBL
BALNC
CONVR
ⓐ
ⓑ
OR
Press the numeric key on the remote control.
1 : COLOR
2 : TINT
3 : CONTR
4 : BRITE
5 : SHARP
*1
7 : BASS
8 : TREBL
9 : BALNC
0 : CONVR (Convergence)
Note *1:
BASS, TREBL, BALNC and CONVR are played in the ADJUSTMENT RANGE mode only.
ⓐ: ADJUSTMENT RANGE mode
ⓑ: ADJUSTMENT OFFSET mode

Fig.7-1 Screen display of FACTORY ADJ mode

7.2 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPAIRED

Note: VR591 and VR593 are protected by the shield covers (ANH1166) so that they can not be adjusted. Do not try to turn these volumes by removing their shield cover. (Otherwise, the sensitivity of the protection circuit against the X-ray and the anode voltage will be affected.)

- Adjustment test points (TP) are located in the POWER SUPPLY - DEFLECTION assembly.

7.2.1 Power Supply Section

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	135V power supply adjustment	Monoscope signal	VR651(D)	Adjust the voltage of both sides of C741(POWER SUPPLY-DEFLECTION assembly) to 135V ± 1V.

• Each Output Voltages Check

After performing +135V adjustment, confirm the each voltages as follows.

Measuring Point	Voltage	Measuring Point	Voltage
E1 +13.5V (pin 9 or 10) for GND (pin 11)	+13.5V ± 0.5V	E2 +35V (pin 3 or 4) for GND (pin 1 or 2)	+32V ± 5V (less than +40V)
E1 +8V (pin 7 or 8) for GND (pin 11)	$+8V^{+2V}_{-1V}$		
E1 +30V (pin 13) for GND (pin 11)	+30V ± 5V	E4 +25V(pin 5) for V.GND(pin 4 or 3)	+25V ± 3V
E1 +39V (pin 14) for GND (pin 11)	+39V ± 3V	E4 − 24V(pin 1) for V.GND(pin 4 or 3)	− 24V ± 3V
E5 H.T.+ (pin 4) for H.T. − (pin5)	+6.25V ± 0.25V	E5 +220V(pin 1) for TP554(GND)	+220V ± 20V

7.2.2 Deflection Section

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	Focus adjustment	Cross hatch signal	Focus VR (VR1)	Optimize the focus of each CRT assembly. (Focus is easier to judge if red and blue are displaced by turning the convergence controls on the remote control as shown in Fig. 7- 13. Readjust these controls to their original positions after completing the focus adjustment.)
2	Horizontal size adjustment	Monoscope signal or ordinary broadcasting	VR592(D)	Adjust the right and left frames for the following values. When adjusting with ordinary broadcasting, adjust so that the does not blacken. • With NTSC and NTSC 4.43: Right = 92.5 ± 2%, Left = 92 ± 2% •With PAL and SECAM: Right = 94.5 ± 2%, Left = 93.5 ± 2% After this adjustment, check the convergence, V. SIZE and H. BLK adjustments.
3	White balance adjustment	Ordinary broadcasting	Screen (VR1) (R) (B)	Adjust the white if proper adjustment cannot be achieved as follows. Set the COLOR by the remote control to minimum, adjust the screen VRs to obtain the best picture.

7.3 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPLACED

Note: As VR591 and VR593 in the POWER SUPPLY-DEFLECTION assembly supplied as a spare part are protected by the shield cover(ANH1166).
Never take off the shield cover(ANH1166).

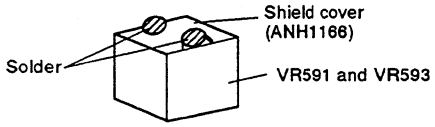


Fig. 7-3 Shield cover

7.3.1 Power Supply Section

- No adjustment required.

7.3.2 Deflection Section

- Adjust focus, horizontal size and white balance as described in section 7.2.2.

7.4 WHEN Y-C SEPARATION ASSEMBLY IS REPAIRED

- Adjustment for NTSC system only.

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	Comb filter adjustment	Color bar	VR902 (Y) L916 (Y)	Adjust so that color signal elements at TP-YOUT(TP-903) in the Y-C SEPARATION assembly are reduced as much as possible.
2	Check for PIONEER standard	If the best picture is not obtained, adjust as described in section 7.6.		

7.5 WHEN Y-C SEPARATION ASSEMBLY IS REPLACED

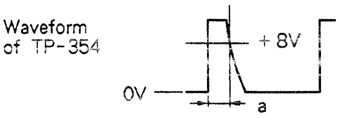
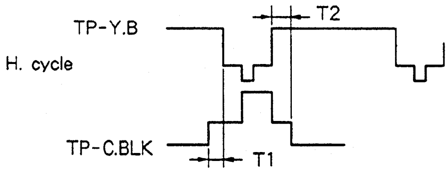
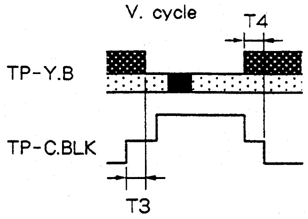
- No adjustment required.

7.6 WHEN VIDEO-AUDIO ASSEMBLY IS REPAIRED

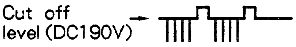
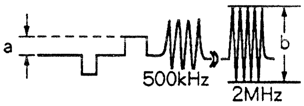
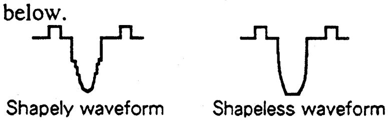
- Adjustment test points (TP) are located in the VIDEO-AUDIO assembly unless otherwise specified.
- Before the adjustment, check the comb filter adjustment as described in section 7.4. (for NTSC system only).

7.6.1. Adjustment Procedure

- Steps 5 and 6 are separately described in other tables. See sections 7.6.2 and 7.6.3.

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	V. SIZE adjustment *1	Monoscope signal	VR357 (V)	Adjust the upper and lower frames for the following values. When adjusting with ordinary broadcasting, adjust so that the picture does not blacken. • With NTSC and NTSC 4.43 Upper :91% ± 3% Lower :95% ± 3% • With PAL and SECAM Upper :92% ± 3% Lower :94 ± 3% After this adjustment, check the convergence and H. SIZE adjustments.
2	V. BLK width adjustment (1) *1	White 100% signal	VR354 (V)	Adjust the TP-V.BLK (TP-354) pulse width "a" so that it is the value specified below at the +8 V point.  •NTSC and NTSC 4.43 a=1.2msec •PAL a=1.2msec ± 60 μ sec •SECAM a=1.2msec
3	H. BLK width adjustment	White 100% signal	VR352 (V)	While simultaneously observing TP-Y.B (TP-369) and TP-C.BLK(TP-366), adjust T1 in H cycle to the value specified below.After adjusting T1, check that T2 is the value specified below. • With NTSC and NTSC 4.43 T1= 1.2 μ sec ± 200nsec T2= 2.4 μ sec ± 400nsec • With PAL and SECAM T1= 1.0 μ sec ± 400nsec T2= 1.8 μ sec ± 400nsec 
4	V. BLK width adjustment (2) *1	White 100% signal	VR351 (V) VR353 (V)	Observing the V. cycle with the setting in step 3, adjust T3 to the value specified below. After adjusting T3, check that T4 is the value specified below. ① For the NTSC or NTSC4.43 system Adjust T3 and T4 to the following values with VR351. T3 = 300 μ sec ± 50 μ sec T4 = 390 μ sec ± 100 μ sec If a signal of the PAL or SECAM system is received after this adjustment, the set value ② (VR353) is deviated. Using the PAL or SECAM SG, adjust VR353 to obtain the value ② shown below.  ② For the PAL or SECAM system Adjust T3 and T4 to the following values with VR353. T3 = 350 μ sec ± 50 μ sec T4 = 500 μ sec ± 100 μ sec

*1: When the V.SIZE adjustment is performed, be sure to check the V.BLK adjustments (1) and (2).

Step No.	Adjustment Item		Input Signal	Adjustment Point	Adjustment Procedure
5	PAL system adjustement		Adjust the glass delay line for PAL demodulator as described in section 7.6.2. (Adjust for PAL system only.)		
6	SECAM system adjustement		Adjust the SECAM IDENT coil, detection coil and BELL FILTER as described in section 7.6.3. (Adjust for SECAM system only.)		
7	White balance adjustment		Color bar signal without color signal	Screen VR (R),(B) (VR1)	Adjust the screen VRs (R) and (B)until grey color can just be seen in the color of dark area. (Do not move the green VR at this stage.)
				VR651(R) VR653(B) Drive VR (V)	Using the drive VR, adjust the color of bright area to white.
8	PIONEER Standard setting	Set to the PIONEER standard setting mode of FACTORY ADJ mode. (When adjustment is completed, resume the normal condition.)			
9		Brightness adjustment	Cross hatch signal	COLOR(*2)	Minimize color by remote control.
				BRITE(*2)	Adjust the cut off level at TP-RK of R. CRT DRIVE assembly to DC190V. (After adjustment, confirm the white balance.)  (After this adjustment, adjust color as described in step No. 4).
10		Sharpness adjustment	Multi burst	SHARP(*2)	At TP-G(TP-373), set the rate of b(peak-to-peak value at 2MHz) to a (level from black to white) as follows. •With NTSC and NTSC 4.43 a : b = 2 : 2.7 (+2.6dB) •With PAL a : b = 2 : 2.6 (+2.3dB) •With SECAM a : b = 2 : 2.7 (+2.6dB) 
11		Color adjustment	Color bar	COLOR(*2)	Adjust screen to the optimum condition.
12		Tint adjustment (*3)		TINT(*2)	Adjust screen to the optimum condition.
13		Contrast adjustment	Free signal	CONTR(*2)	Adjust screen to the optimum condition.
14				—	At the TP-BK of B. CRT DRIVE assembly, confirm that the signal is shaped as shown below. 
15	Blue tailing adjustment		Cross signal	—	Adjust the SG output of the input cross signal to the maximum level.
					Maximize contrast by remote control.
				VR652(V)	Turn VR652 fully counterclockwise (resulting in blue tailing).
					Turn the VR clockwise until there is no blue tailing at the vertical cross line on the screen.

*2: Adjust by remote control.
*3: Adjust for NTSC and NTSC 4.43 only.

7.6.2 PAL System Adjustment

- This adjustment is separated from the table in 7.6.1 as it is to be performed only for the PAL system.
- The adjustment requires the DEM pattern.
- If the adjustment is not correctly performed, colors change at each scanning line, and this can be judged only by using the DEM pattern.

Step No.	Adjustment item	Input signal	Adjustment point	Adjustment procedure
5-1	Adjustment of glass delay line for PAL demodulator.	PAL DEM pattern	——	Set oscilloscope as follows:H=2mS/div; V=100mV/div. Observe the waveforms at pin 60 (R-Y IN) and pin 62 (B-Y IN) of IC356.
5-2			L354 (V)	Adjust so that the waveform of the measuring area 1 in Fig. 7-5 (Fig. 7-6 a) appears as shown in Fig. 7-6 b.
5-3			VR356 (V)	Adjust so that the waveform of the measuring area 2 in Fig. 7-5 appears as shown in Fig. 7-6 c.
5-4	Repeat steps 5-2 and 5-3 until the optimum picture is obtained. (Adjust so that the measuring area 1 is set below 50mVp-p, and the measuring area 2 is set below 180mVp-p.)			

NOTE ;
△ ; (B-Y) = 0
□ ; (R-Y) = 0

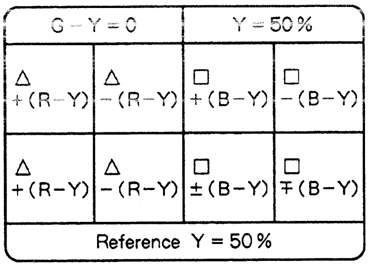

G−Y=0
Y=50%
△ +(R−Y)
△ −(R−Y)
□ +(B−Y)
□ −(B−Y)
△ +(R−Y)
△ −(R−Y)
□ ±(B−Y)
□ ∓(B−Y)
Reference Y = 50%

Fig. 7-4 DEM pattern

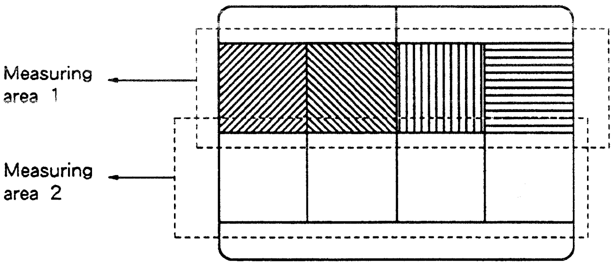
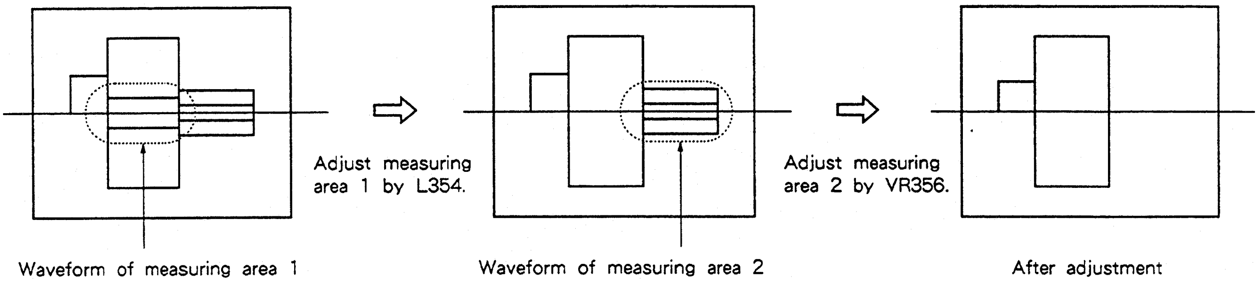

Measuring area 1
Measuring area 2

Fig. 7-5 Measuring area


Adjust measuring area 1 by L354.
Adjust measuring area 2 by VR356.
Waveform of measuring area 1
Waveform of measuring area 2
After adjustment

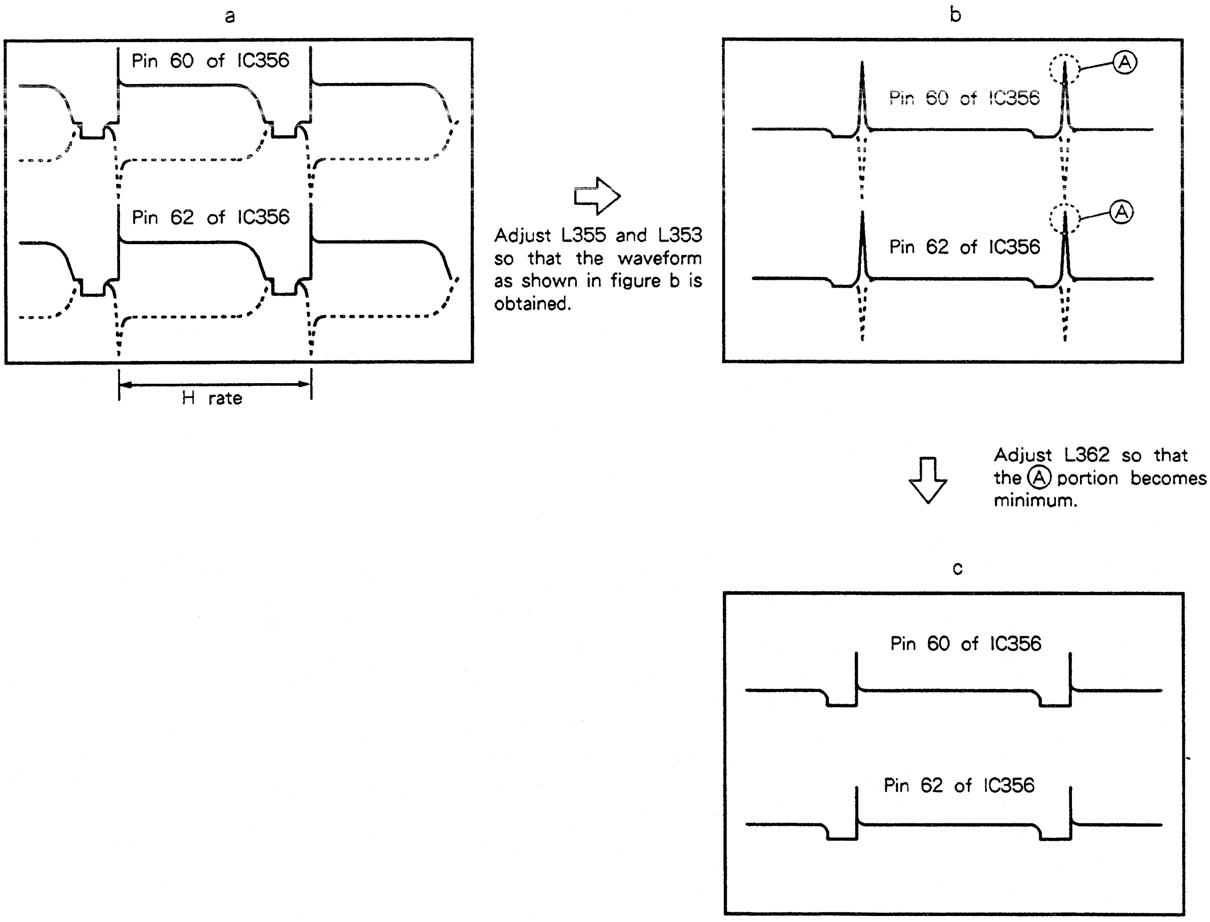
a. b. c.

Fig. 7-6 Oscilloscope screen

7.6.3 SECAM System Adjustment

- This adjustment is separated as it is to be performed only for the SECAM system.

Step No.	Adjustment item	Input signal	Adjustment point	Adjustment procedure
6-1	SECAM identity adjustment	SECAM color bar	L357 (V)	Adjust so that the DC voltage at pin 23 of IC356 is maximum.
6-2	Detection coil and Bell filter adjustment	Black signal (including SECAM color carrier)	L355 (V): Pin 60(R-Y IN) L353 (V): Pin 62(B-Y IN)	Adjust so that waveform appears as shown in Fig. 7-7 b at pin 60 (R-Y IN) and pin 62 (B-Y IN) of IC356.
6-3			L362 (V)	Adjust so that the waveform appears as shown in Fig. 7-7 c at pin 60 (R-Y IN) and pin 62 (B-Y IN) of IC356.
6-4	Repeat steps 6-2 to 6-3 until the optimum picture is obtained. Check to see that the color bars are displayed correctly on the screen after adjustment.			



Adjust L355 and L353 so that the waveform as shown in figure b is obtained.

Adjust L362 so that the Ⓐ portion becomes minimum.

Fig. 7-7 SECAM detection coil adjustment

7.7 WHEN VIDEO-AUDIO ASSEMBLY IS REPLACED

- Before the adjustment, check the comb filter adjustment as described in section 7.4. (For NTSC system only).
- Perform the V. size adjustment, V. BLK width adjustment(1), H. BLK width adjustment, V. BLK width adjustment (2), white balance, PIONEER standard setting, and Blue tailing adjustment as described in section 7.6.

7.8 WHEN TUNER-NICAM ASSEMBLY IS REPAIRED

- Adjustment test points (TP) are located in the TUNER-NICAM assembly unless otherwise specified.

7.8.1 Tuner Section Adjustment

- The items to be adjusted here depend on the local TV standard systems. The systems for which the adjustments are required are shown in the respective rows of the table.
- For the necessary input signal, see Table 7-1. If not mentioned in the table, supply the signals to the antenna input terminal. Observe Fig. 7-9 when connecting.
- When receiving another TV system after performing the adjustments with the specified TV system, the reception condition may become insufficient. In this case, readjust with the current TV system or the best systems specified in Table 7-1.
- The trap adjustment in step 3 is separately described in another table. See section 7.8.2.
- This model is not equipped with the AFT (Automatic Fine Tuning) function.

Table 7-1

•Values shown for "fp" in the table are the reference values. Set for the nearest frequency and channel of those available in your servicing area.

Signal No.	Signal Contents	Antenna input Level *2	SG system setting *1
①	33.4MHz unmodulated signal	90 dBμV	L'
②	39.9 MHz unmodulated signal	90 dBμV	
③	fp=119.25MHz, Color bar Audio ; 1kHz, 100% MOD. monaural	80 dBμV	Any of M, B, G, I, D, K, L and L' (B and G are the best.)
④	fp=196.25MHz, Multi burst Audio ; 1kHz, 100% MOD. monaural	58 dBμV	Any of M, B, G, I, D and K (B and G are the best.)
⑤	fp=175.25MHz, 100% white Audio ; 1kHz, 100% MOD. stereo	80 dBμV	
⑥	fp=487.25MHz, Color bar Audio ; 400Hz, 100% MOD. monaural	80dBμV	L
⑦	fp=55.25MHz, Color bar Audio ; 1kHz, 100% MOD. ± 25kHz dev, monaural	80 dBμV	M (US)
⑧	fp=67.25MHz, Cross hatch Audio ; 300Hz, 30% MOD. stereo (L ch only)	80 dBμV	
⑨	fp=175.25MHz, 10 steps Audio ; 5kHz, 30% MOD. stereo (L ch only)	80 dBμV	

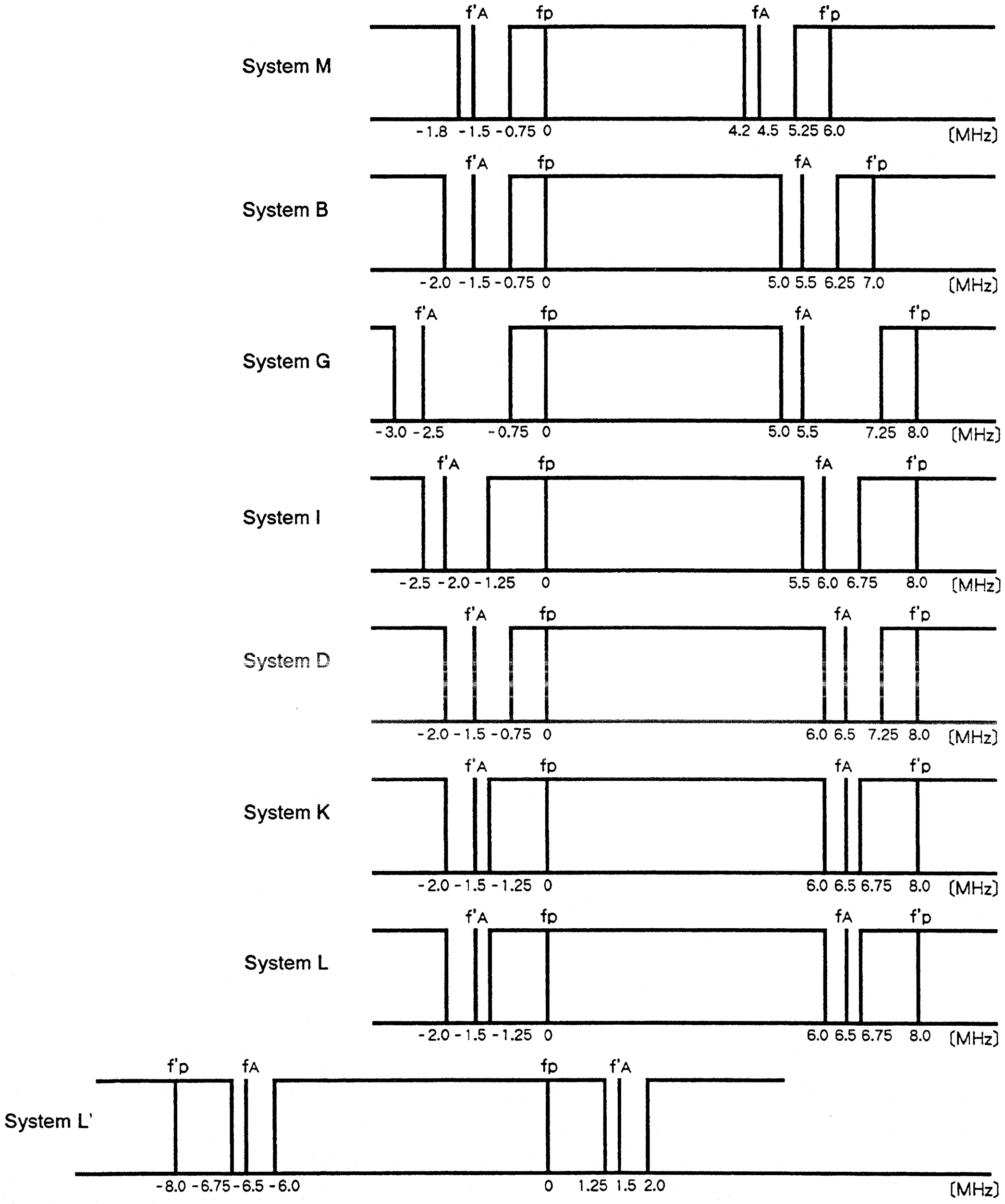
*1: Set the SG system to the local TV system.

*2:Set the SG audio level to a value lower than the antenna input level by the following value.

• System M : 6dB , • System B : 10dB , • System G : 10dB , • System I : 7dB , • System D :7dB ,
• System K : 7dB , • System L : 10dB , • System L' : 10dB

Step No.	Adjustment Item	System for which the adjustment is required	Input Signal	Adjustment Point	Adjustment Procedure
1	L' OSC adjustment	L'	Signal① input to TP-IF IN (P-12)	L16 (T)	Adjust the frequency of TP-TRAP IN (P-23) to 38.9MHz ± 20kHz. (Use the spectrum analyzer.)
2	Balance circuit of the inverter circuit		Signal② input to TP-IF IN (P-12)	VR11 (T)	Minimize the 39.9MHz element of TP-TRAP IN (P-23). (Use the spectrum analyzer.)
3	Trap adjustment	This adjustment depends the local TV system. See section 7.8.2.			
4	Video LLD adjustment	M, B/G, I, D/K, L, L'	Signal ③	L22 (T)	Check that the color-bar signal is provided to TP-VIDEO (P-17). If not, adjust L22 to provide the color bar.
					Minimize the color signal element of TP-VIDEO (P-17).
5	AGC adjustment *1	M, B/G, I, D/K, L, L'	Signal ④	VR17 (T)	Adjust the DC voltage of TP-AGC (P-14) to 6.5V ± 0.3V.
6	Video level adjustment *1		Signal ⑤	VR13 (T)	Adjust the output level of video signal at TP-VIDEO (P-17) to 2.2Vp-p ± 0.1V.
7	SECAM level adjustment	L, L'	Signal ⑥	VR14 (T)	Adjust the video detection level at TP-VIDEO (P-17) to 2.2Vp-p ± 0.2V.
8	VCO adjustment	M, B/G, I, D/K	Signal ⑤	L30 (T)	Check that the video signal (100% white) is provided to TP-LOCK (P-20). If not, adjust the video signal.
9				——	Measure the DC voltage of TP-APC (P-16) when TP-IF AGC (P-15) and TP-GND (P-11) are short circuited.
10				L30 (T)	Release TP-IF AGC (P-15) and TP-GND (P-11) and adjust the DC voltage of TP-APC (P-16) to ± 100mV with respect to the value obtained in step 9.
11	US audio distortion adjustment	System M (US only)	Signal ⑦	L32 (T)	Adjust to minimize the distortion of 1kHz sine-wave output to TP-A/L (P-21:L ch output terminal).
12	US stereo separation adjustment		Signal ⑧	RV03(IC)	Minimize the output of TP–A/L (P-21:L ch output terminal).
			Signal ⑨	RV06(IC)	Minimize the output of TP–A/L (P-21:L ch output terminal).

*1: When adjusting AGC and the video level in the L or L' system area, use SG of M, B, G, I, D or K (SG of B or G is best).
If these items are not adjusted properly, white saturation, noise or beat may be observed on the picture or the picture may be darkened.


System M
f'A fp fA f'p
-1.8 -1.5 -0.75 0 4.2 4.5 5.25 6.0 (MHz)
System B
f'A fp fA f'p
-2.0 -1.5 -0.75 0 5.0 5.5 6.25 7.0 (MHz)
System G
f'A fp fA f'p
-3.0 -2.5 -0.75 0 5.0 5.5 7.25 8.0 (MHz)
System I
f'A fp fA f'p
-2.5 -2.0 -1.25 0 5.5 6.0 6.75 8.0 (MHz)
System D
f'A fp fA f'p
-2.0 -1.5 -0.75 0 6.0 6.5 7.25 8.0 (MHz)
System K
f'A fp fA f'p
-2.0 -1.5 -1.25 0 6.0 6.5 6.75 8.0 (MHz)
System L
f'A fp fA f'p
-2.0 -1.5 -1.25 0 6.0 6.5 6.75 8.0 (MHz)
System L'
f'p fA fp f'A
-8.0 -6.75 -6.5 -6.0 0 1.25 1.5 2.0 (MHz)

NOTE: fp ;Video carrier
fA ;Audio carrier
f'p ;Upper adjacent video carrier
f'A ;Lower adjacent audio carrier
IF ;38.9(MHz)

Fig. 7 – 8 Relationship between the video and audio carrier frequencies of the TV system

7.8.2 Trap Adjustment

- This adjustment is separately described, as the adjustment procedure of the tuner section depends on the TV standard systems.
- For the signal to be input, see Table 7 - 2. Connect the signal to the antenna input terminal.
- Alternately adjust F13 and F19 for the optimum setting.

Table 7 - 2 Input signal

• Use the channel specified for the signal ①.

Signal No.	Video	Audio	Antenna Input Level	Channel
Signal ①	Color bar	1kHz, 100% MOD.	80dB μV	Free channel.
Signal ②				Next higher channel of the signal ①.
Signal ③				Next lower channel of the signal ①.

Note:Set the SG audio level to a value lower than the antenna input level by the following value.
• System M : 6dB , • System B : 10dB , • System G : 10dB , • System I : 7dB , • System D : 7dB ,
• System K : 7dB , • System L : 10dB , • System L' : 10dB

● For System M

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
3-1	Adjacent video trap adjustment	Signal ②	F12 (T)	Adjust the 32.9MHz element of TP-SAW IN (P-19) to a minimum.
3-2	Audio trap adjustment	Signal ①	F13, F19 (T)	Adjust the 34.4MHz element of TP-SAW IN (P-19) to a minimum.
3-3	Adjacent audio trap adjustment	Signal ③	F18 (T)	Adjust the 40.4MHz element of TP-SAW IN (P-19) to a minimum.

● For System B

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
3-1	Adjacent video trap adjustment	Signal ②	F12 (T)	Adjust the 31.9MHz element of TP-SAW IN (P-19) to a minimum.
3-2	Audio trap adjustment	Signal ①	F13, F19 (T)	Adjust the 33.4MHz element of TP-SAW IN (P-19) to a minimum.
3-3	Adjacent audio trap adjustment	Signal ③	F18 (T)	Adjust the 40.4MHz element of TP-SAW IN (P-19) to a minimum.

● For System G

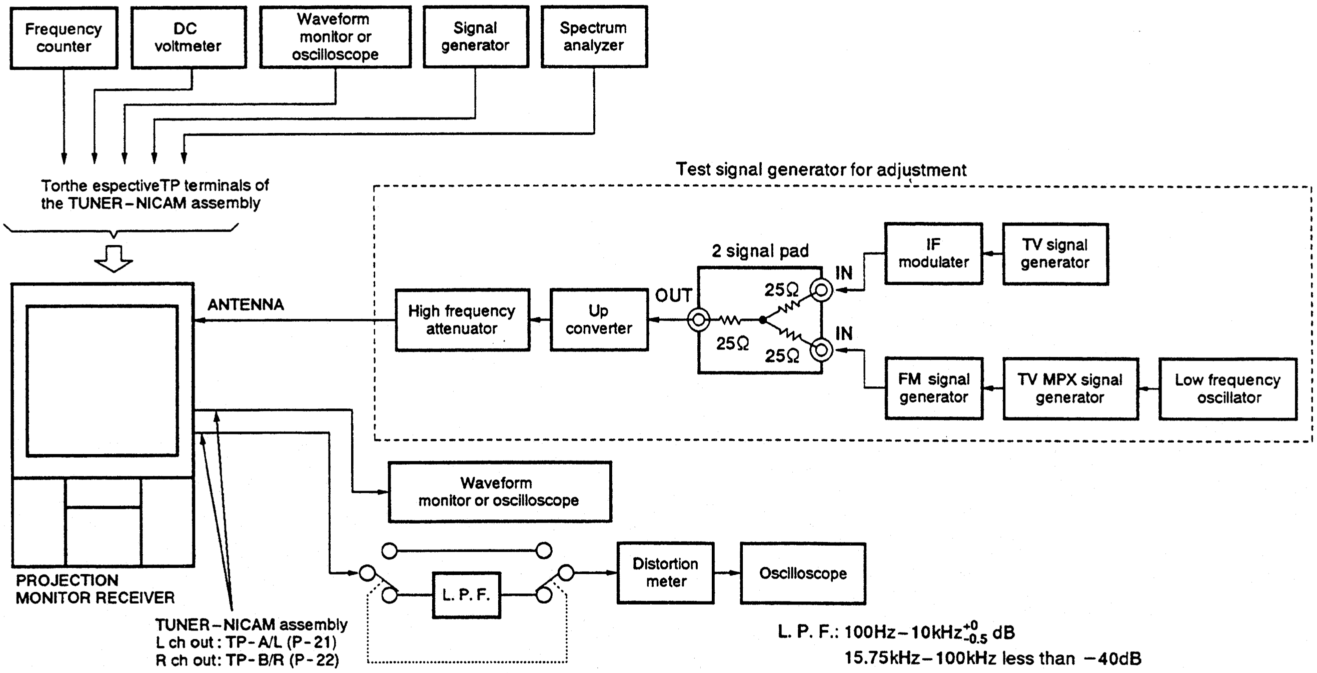
Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
3-1	F12 adjustment	——	F12 (T)	Adjust only when the picture is not displayed correctly.
3-2	Audio trap adjustment	Signal ①	F13, F19 (T)	Adjust the 33.4MHz element of TP-SAW IN (P-19) to a minimum.
3-3	F18 adjustment	——	F18 (T)	Adjust only when the picture is not displayed correctly.

- **For system I**

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
3-1	Audio trap adjustment	Signal ①	F12 (T)	Adjust the 32.9MHz element of TP-SAW IN (P-19) to a minimum.
3-2	F13 and F19 adjustment	——	F13, F19 (T)	Adjust only when the picture is not displayed correctly.
3-3	F18 adjustment	——	F18 (T)	

- **For any of system D, K, L and L'**

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
3-1	Audio trap adjustment	Signal ①	F12 (T)	Adjust the 32.4MHz element of TP-SAW IN (P-19) to a minimum.
3-2	F13 and F19 adjustment	——	F13, F19 (T)	Adjust only when the picture is not displayed correctly.
3-3	Adjacent audio trap adjustment	Signal ③	F18 (T)	Adjust the 40.4MHz element of TP-SAW IN (P-19) to a minimum.


Frequency counter
DC voltmeter
Waveform monitor or oscilloscope
Signal generator
Spectrum analyzer
Torthe espectiveTP terminals of the TUNER-NICAM assembly
Test signal generator for adjustment
ANTENNA
High frequency attenuator
Up converter
OUT
2 signal pad
25Ω
25Ω
25Ω
IN
IN
IF modulater
TV signal generator
FM signal generator
TV MPX signal generator
Low frequency oscillator
Waveform monitor or oscilloscope
L. P. F.
Distortion meter
Oscilloscope
PROJECTION MONITOR RECEIVER
TUNER-NICAM assembly
L ch out : TP-A/L (P-21)
R ch out: TP-B/R (P-22)

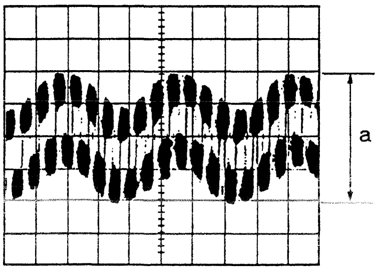
L. P. F.: 100Hz-10kHz$^{+0}_{-0.5}$ dB
15.75kHz-100kHz less than -40dB

Fig. 7-9 Connection diagram when adjusting the tuner section

7.8.3 NICAM Section Adjustment

- This adjustment is required only in the B/G CCIR audio multiplex area.
- Perform this adjustment after 7.8.1 Tuner Section Adjustment and 7.8.2 Trap Adjustment.

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	CCIR FM stereo adjustment	Free signal of B/G CCIR audio multiplex signal (STEREO or DUAL)	F201 (T)	Connect an oscilloscope to pin 8 of IC202 and observe the waveform (Fig. 7-10). Adjust the amplitude (Fig. 7-10 a) of waveform to a maximum.



H : 5 μsec/div., V : 100 mV/div.

Fig. 7-10 Waveform of pin 8 of IC202

Adjust "a" to a maximum.

Note : If it is not adjusted properly, a waveform having a smaller and flatter amplitude than that shown in Fig. 7-10 will be displayed.

7.9 WHEN TUNER-NICAM ASSEMBLY IS REPLACED

- No adjustment required.

7.10 WHEN AM-DEMOD ASSEMBLY IS REPAIRED

- This adjustment is required only for System L or L'.
- Adjustment test points (TP) are located in the AM-DEMOD assembly.

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	AM detection adjustment	Supply a channel of System L or L' to the antenna input terminal. The audio signal should be 1 kHz, 50% MOD, AM while there are no requirements for the video signal.	L1018 (A)	Adjust so that a sinewave of 1 kHz is output from pin 5 of IC1012 with minimum distortion and maximum level.
2	Audio level adjustment		VR1012 (A)	Adjust so that the level of the sinewave of 1 kHz output from pin 5 of CN1016 is 200 mVrms ± 50 mV.

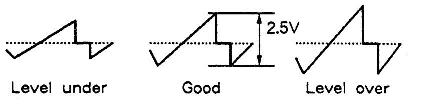
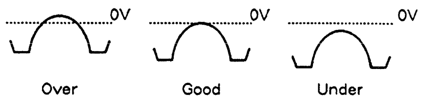
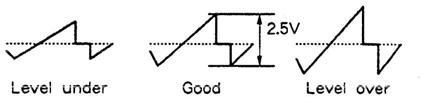
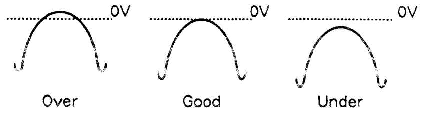
7.11 WHEN AM-DEMOD ASSEMBLY IS REPLACED

- No adjustment required.

7.12 WHEN CONVERGENCE ASSEMBLY IS REPAIRED OR REPLACED

7.12.1 PARABOLA WAVEFORM TOP LEVEL ADJUSTMENT

- Adjustment test point(TP)are located in the CONVERGENCE assembly.
- Perform this adjustment only when convergence is shifted.

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	H SAWTOOTH WAVEFORM LEVEL	VR701 (C)	At TP-H.NOKO (P-805), set the level of output waveform to 2.5Vp-p. 
2	TOP LEVEL OF H PARABOLA WAVEFORM	VR750 (C)	At TP-H.PARA (P-802), set the top level of output waveform to 0V ± 20mV. 
3	V SAWTOOTH WAVEFORM LEVEL	VR702 (C)	At TP-V.NOKO (P-803), set the level of output waveform to 2.5Vp-p. 
4	TOP LEVEL OF V PARABOLA WAVEFORM	VR749(C)	At TP-V.PARA (P-801), set the top level of output waveform to 0V ± 20mV. 

7.12.2 CONVERGENCE ADJUSTMENT

- Picture movement and adjustment points are summarized in Fig. 7 - 14 and 7 - 15.
- Input signal is the cross-hatch signal for PAL.
- Perform the position adjustment by remote control keys as follows. (Refer to Fig. 7 - 11.)
- After performing all adjustments, release the short-circuit to obtain white screen and perform the pre-adjustment.
- Correct the vertical line by horizontal correcting signal and correct the horizontal line by vertical correcting signal.
- Adjustment points are located in the CONVERGENCE assembly.

※1: Convergence Adjustment Screen and How to Operate.

Ⓐ : Each time the set switch of the front control section is pressed, the display switches screens from ② to ⑨.

Ⓑ : To switch from ADJ ↓ ↑ to ADJ ←→ : press 4 or 6 of the numeric keys on the remote control unit.

Ⓑ' : To switch from ADJ ←→ to ADJ ↓ ↑ : press 2 or 8 of the numeric keys on the remote control unit.

Ⓒ : With the ADJ ↓ ↑ screen, the display switches from screen ③, ⑤, ⑦ to ⑨ when you press 5 of the numeric keys on the remote control unit.

Ⓒ' : With the ADJ ←→ screen, the display switches from screen ②, ④, ⑥ to ⑧ when you press 5 of the numeric keys on the remote control unit.

Red horizontal adjustment : With screen ② or ⑥, press **2** (upper) or **8** (lower) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit.

Red vertical adjustment : With screen ③ or ⑦, press **4** (left) or **6** (right) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit.

Blue horizontal adjustment : With screen ④ or ⑧, press **2** (upper) or **8** (lower) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit.

Blue vertical adjustment : With screen ⑤ or ⑨, press **4** (left) or **6** (right) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit.

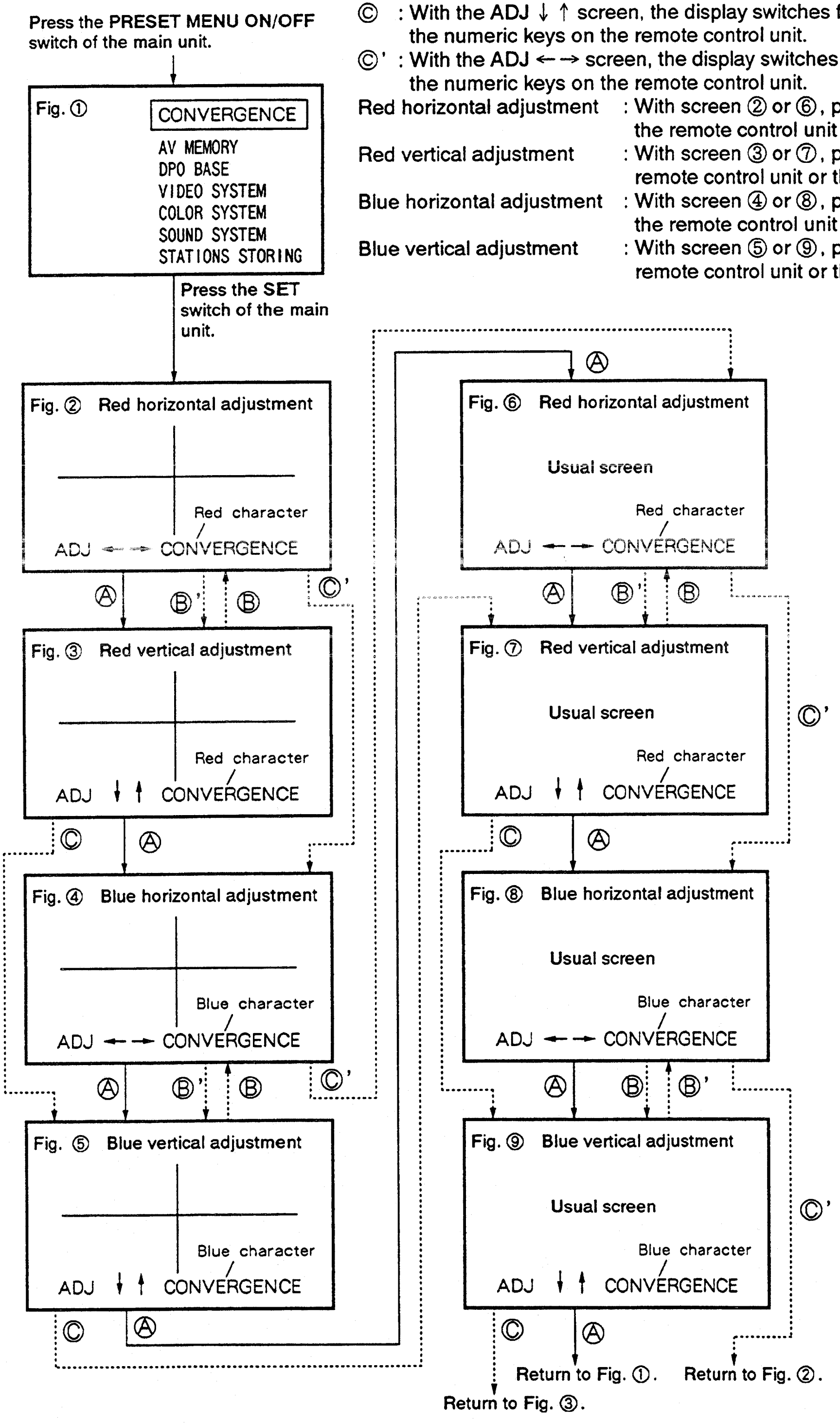

Press the PRESET MENU ON/OFF switch of the main unit.
Fig. ①
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
Press the SET switch of the main unit.
Fig. ② Red horizontal adjustment
Red character
ADJ ←→ CONVERGENCE
Fig. ③ Red vertical adjustment
Red character
ADJ ↓ ↑ CONVERGENCE
Fig. ④ Blue horizontal adjustment
Blue character
ADJ ←→ CONVERGENCE
Fig. ⑤ Blue vertical adjustment
Blue character
ADJ ↓ ↑ CONVERGENCE
Fig. ⑥ Red horizontal adjustment
Usual screen
Red character
ADJ ←→ CONVERGENCE
Fig. ⑦ Red vertical adjustment
Usual screen
Red character
ADJ ↓ ↑ CONVERGENCE
Fig. ⑧ Blue horizontal adjustment
Usual screen
Blue character
ADJ ←→ CONVERGENCE
Fig. ⑨ Blue vertical adjustment
Usual screen
Blue character
ADJ ↓ ↑ CONVERGENCE
Ⓐ
Ⓑ
Ⓑ'
Ⓒ
Ⓒ'
Return to Fig. ①.
Return to Fig. ②.
Return to Fig. ③.

Fig. 7-11 Key operation on the convergence screen

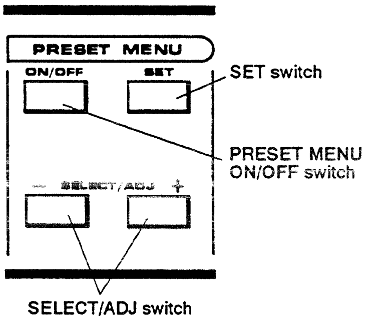

PRESET MENU
ON/OFF
SET
SET switch
PRESET MENU ON/OFF switch
– SELECT/ADJ +
SELECT/ADJ switch

Fig. 7-12
Key disposition of the main unit

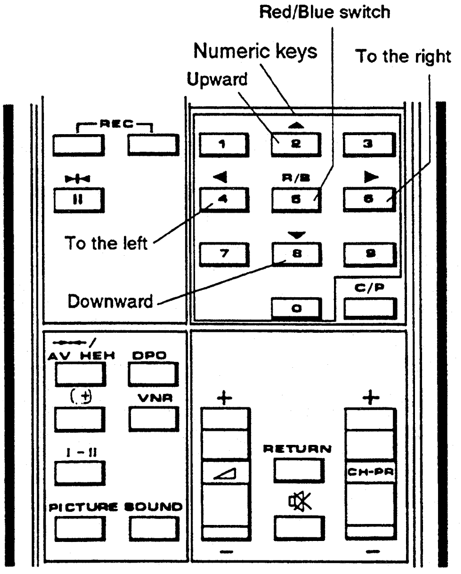

Red/Blue switch
Numeric keys
Upward
To the right
To the left
Downward
REC
II
1
2
3
4
5
6
7
8
9
0
R/B
C/P
AV HEH
DPO
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
–

Fig.7-13
Key disposition of the remote control

(1) GREEN LINE ADJUSTMENT

- Since the green lines are used as a reference when adjusting red and blue, be sure to adjust them accurately.
- Short-circuit TP-R (TP-375), TP-B (TP-374) and TP-GND (TP-377) in the VIDEO-AUDIO assembly, then green lines appear on the screen. Release the short-circuit after green line adjustment.

Step No.	Adjustmen Item	Adjustment Point	Adjustment Procedure
1	GH-PIN	VR705 (C)	Adjust the green line to a straight line(refer to Fig. 7-14 and 7-15).
2	GH-KEY	VR704 (C)	
3	GV-SKEW	VR706 (C)	
4	GV-BOW	VR707 (C)	
5	GV-KEY	VR708 (C)	
6	GV-S-KEY	VR709 (C)	
7	GV-PIN	VR710 (C)	
8	Repeat steps 1 thru 7 until the best possible picture is obtained.		

(2) RED LINE ADJUSTMENT

- Short-circuit TP- B (TP- 374) and TP- GND (TP- 377) in the VIDEO - AUDIO assembly, then green lines and red lines appear on the screen. Release the short- circuit after red line adjustment.
- Adjust each VR so that the red lines converge with the green lines to obtain yellow lines.
- After adjustmet, perform fine-adjustment by observing the overall screen.

● Red Horizontal Distortion Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	RH- SKEW	VR711 (C)	Adjust the red vertical lines in the center of the screen to straight lines without distortion and lean. (Refer to Fig. 7- 14.)
2	RH- BOW	VR712 (C)	
3	Repeat steps 1 and 2.		
4	RH- KEY	VR713 (C)	Adjust the red vertical lines in the right and left section of the screen to straight lines without lean. (Refer to Fig. 7- 14.)
5	RH- S- KEY	VR714 (C)	
6	Repeat steps 4 and 5.		
7	RH- PIN	VR715 (C)	Adjust the red vertical lines in the right and left sections of the screen to straight lines without distortion. (Refer to Fig. 7- 14.)
8	RH- S- PIN	VR716 (C)	
9	Repeat steps 7 and 8 or steps 1 thru 8.		

● Red Horizontal Interval Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	RH- POSITION	Remote control keys, 4 and 6	Adjust so that the red vertical lines converge with the green vertical lines in the center of the screen to obtain yellow lines. (This serves as the reference setting, but if the lines diverge during the adjustment, proceed with the adjustment after considering this divergence.)
2	RH- LIN	VR717 (C)	Adjust so that the red vertical lines converge with the green vertical lines in the right and left sections of the screen to obtain yellow lines. (Refer to Fig. 7- 14)
3	RH- 4- LIN	VR720 (C)	
4	RH- S- LIN	VR718 (C)	
5	RH- SIZE	VR719 (C)	
6	Repeat steps 1 thru 5.		

● Red Vertical Distortion Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	RV- SKEW	VR721 (C)	Adjust the red horizontal lines in the center of the screen to straight lines without distortion and lean. (Refer to Fig. 7- 15.)
2	RV- BOW	VR722 (C)	
3	Repeat steps 1 and 2.		
4	RV- KEY	VR723 (C)	Adjust the red horizontal lines in the lower and upper sections of the screen to straight lines without lean. (Refer to Fig. 7- 15.)
5	RV- S- KEY	VR724 (C)	
6	RV- S- PIN	VR726 (C)	
7	RV- PIN	VR725 (C)	
8	Repeat steps 4 thru 7 or steps 1 thru 7.		

● Red Vertical Interval Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	RV- LIN	VR727 (C)	Adjust so that the red horizontal lines converge the green horizontal lines in the center of the screen to obtain yellow lines. (This serves as the reference setting, but if the lines diverge during the adjustment, proceed with the adjustment after considering this divergence.) (Refer to Fig. 7- 15.)
2	RV- S- LIN	VR729 (C)	
3	RV- POSITION	Remote control keys, 2 and 8	
4	RV- SIZE	VR728 (C)	Adjust so that the red horizontal lines converge the green horizontal lines in the lower and upper sections of the screen to obtain yellow lines. (Refer to Fig. 7- 15.)
5	Repeat steps 1 thru 4.		

(3) BLUE LINE ADJUSTMENT

- Short-circuit TP- R (TP- 375) and TP- GND (TP- 377) in the VIDEO - AUDIO assembly, then green lines and blue lines appear on the screen. Release the short-circuit after blue line adjustment.
- Adjust each VR so that the blue lines converge with the green lines to obtain cyan lines.
- After adjustment, perform fine-adjustment by observing the overall screen.

• Blue Horizontal Distortion Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	BH-SKEW	VR730 (C)	Observe the blue vertical lines on the screen, and adjust in the same way as the red horizontal distortion compensation adjustment.
2	BH-BOW	VR731 (C)	
3	BH-KEY	VR732 (C)	
4	BH-S-KEY	VR733 (C)	
5	BH-PIN	VR734 (C)	
6	BH-S-PIN	VR735 (C)	

• Blue Horizontal Interval Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	BH-POSITION	Remote control keys, 4 and 6	Adjust so that the blue lines converge with the green lines to obtain cyan lines in the same way as the red horizontal interval compensation adjustment.
2	BH-LIN	VR736 (C)	
3	BH-4-LIN	VR739 (C)	
4	BH-S-LIN	VR737 (C)	
5	BH-SIZE	VR738 (C)	

• Blue Vertical Distortion Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	BV-SKEW	VR740 (C)	Observe the blue horizontal lines on the screen, and adjust in the same way as the red vertical distortion compensation adjustment.
2	BV-BOW	VR741 (C)	
3	BV-KEY	VR742 (C)	
4	BV-S-KEY	VR743 (C)	
5	BV-S-PIN	VR745 (C)	
6	BV-PIN	VR744 (C)	

• Blue Vertical Interval Compensation Adjustment

Step No.	Adjustment Item	Adjustment Point	Adjustment Procedure
1	BV-LIN	VR746 (C)	Adjust so that, the blue lines converge with the green lines to obtain cyan lines in the same way as the red vertical interval compensation adjustment.
2	BV-S-LIN	VR748 (C)	
3	BV-POSITION	Remote control keys, 2 and 8	
4	BV-SIZE	VR747 (C)	

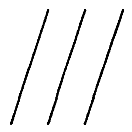
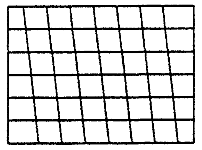
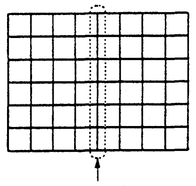
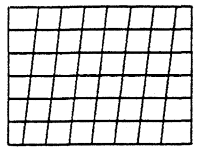
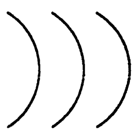
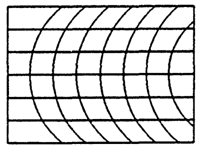
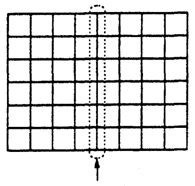
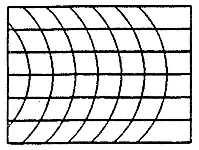
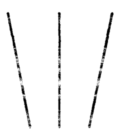
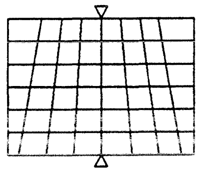
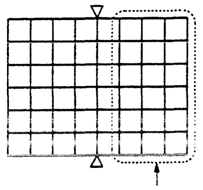
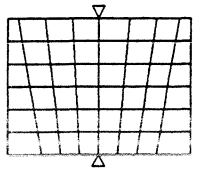
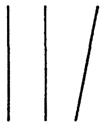
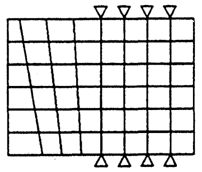
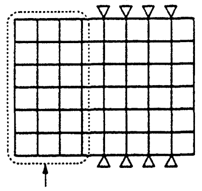
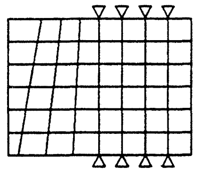
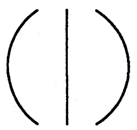
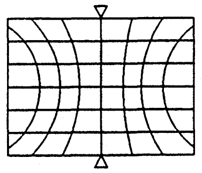
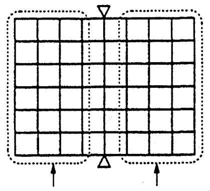
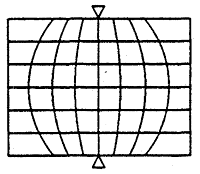
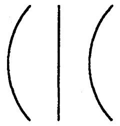
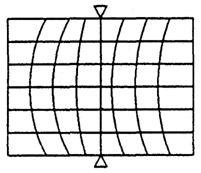
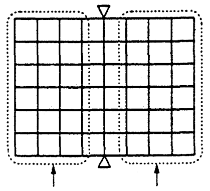
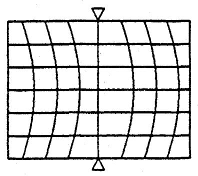
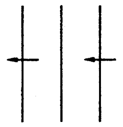
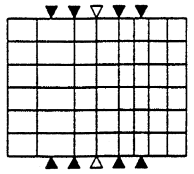
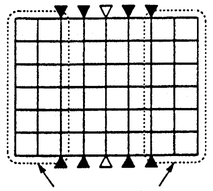
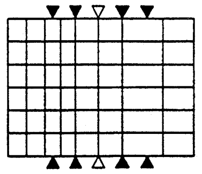
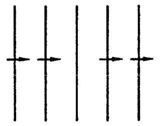
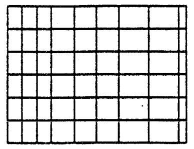
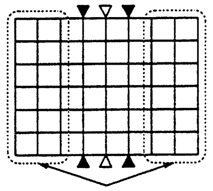
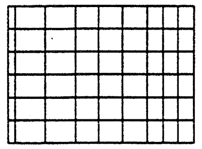
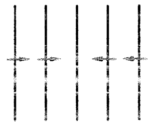
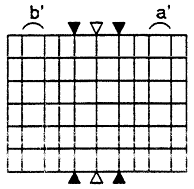
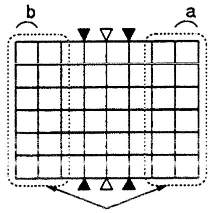
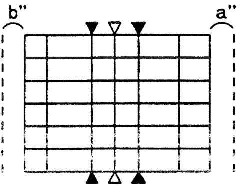
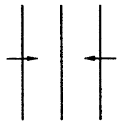
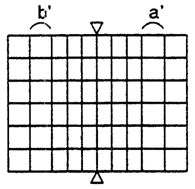
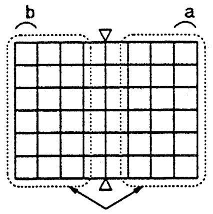
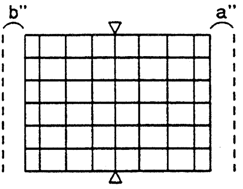
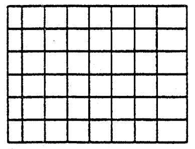
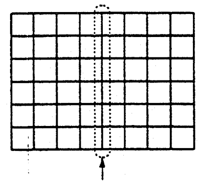
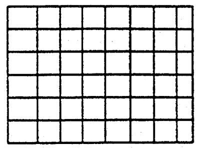
Compensation	Signal and Mark *1	Distorted Screen	Corrected Screen	Distorted Screen	Adjustment Point	
Horizontal distortion compensation	H-SKEW 		 Attention point		Observe the vertical lines in the center of the screen (where there is no H-KEY, H-S-KEY, H-PIN nor H-S-PIN movement), then adjust the vertical lines to eliminate lean.	To obtain the best possible lines, adjust the vertical lines in the center of the screen following the adjustment procedure of H-SKEW and H-BOW.
	H-BOW 		 Attention point		Observe the vertical lines in the center of the screen, then adjust the bowed lines to straight lines.	
	H-KEY 		 Attention point		Observe the vertical lines in the right section of the screen (where there is no H-S-KEY movement), then adjust the vertical lines to eliminate lean.	To eliminate lean, adjust the vertical lines in the right and left sections of the screen following the adjustment procedure of H-KEY and H-S-KEY.
	H-S-KEY 		 Attention point		Observe the vertical lines in the left section of the screen, then adjust the vertical lines to eliminate lean.	
	H-PIN 		 Attention point		Observe the vertical lines in the right and left sections of the screen, then adjust the bowed lines to symmetrize the right and left by H-S-PIN. And adjust the bowed vertical lines in the right and left sections of the screen to straight lines by H-PIN.	To eliminate distortion, straighten the vertical lines in the right and left sections of the screen following the adjustment procedure of H-PIN and H-S-PIN.
	H-S-PIN 		 Attention point			

Fig. 7-14 Horizontal compensatior

Compensation	Signal and Mark *1	Distorted Screen	Corrected Screen	Distorted Screen	Adjustment Point	
Horizontal interval compensation	H-LIN 		 		Adjust following the adjustment procedure of H-LIN, H-4-LIN and H-S-LIN (remember the degree of H-SIZE movement)so that the interval between vertical lines on the right section is the same as on the left section, with a central point which does not move. For example, when the vertical lines in the right section of the screen are moved to right direction, move the vertical lines in the left section of the screen as same degree as the gap in the right section to the left direction.	The vertical lines in the center of the screen converge into the green lines by H-POSITION. And also, the vertical lines in the right and left sections of the screen converge into the green lines by H-LIN, H-4-LIN, H-S-LIN and H-SIZE.
	H-4-LIN 		 			
	H-S-LIN 	 	 	 		
	H-SIZE 	 	 	 	Converge the vertical lines in the right and left sections of the screen to green lines.	
	H-POSITION		 		The vertical lines of the screen move parallel on the right and left by the convergence control of the remote control or main unit. When the vertical line moves at will, consider the degree of movement.	

Note: KEY is short for KEYSTONE,
and LIN for LINEARITY
∇ :denotes points which do not move
▼ :denotes points which hardly move
*1:Sketch is printed on the p.c. board.

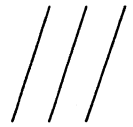
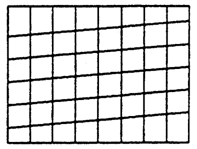
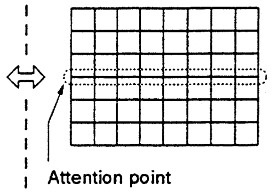
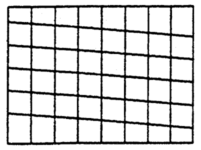
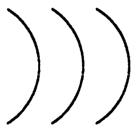
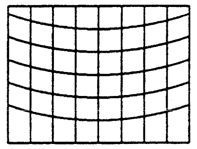
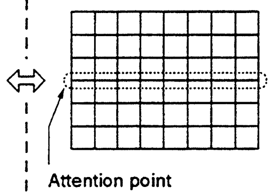
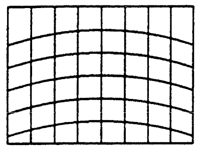
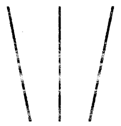
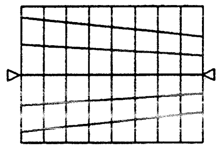
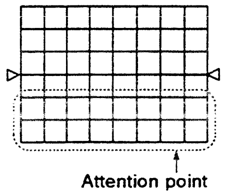
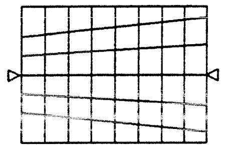
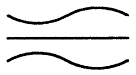
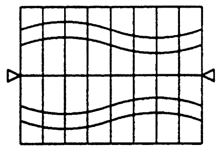
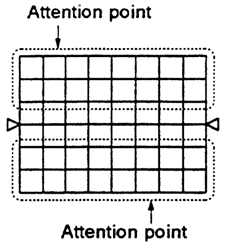
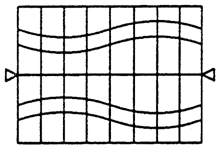
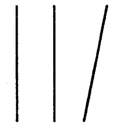
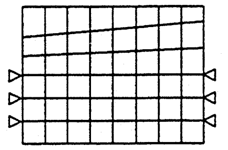
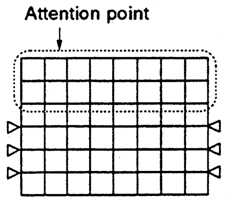
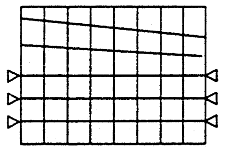
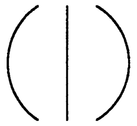
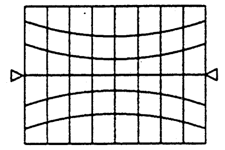
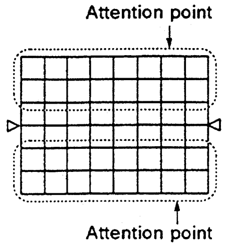
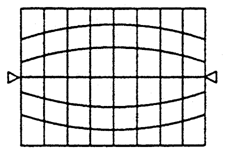
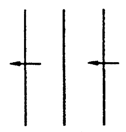
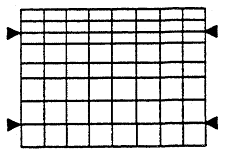
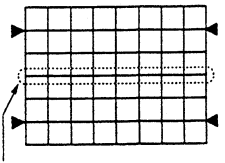
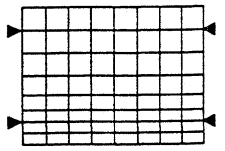
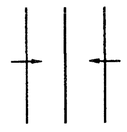
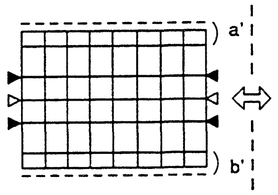
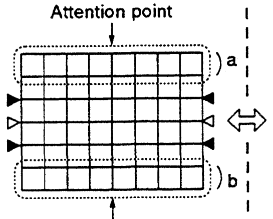
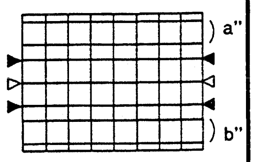
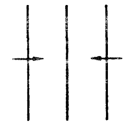
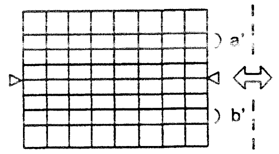
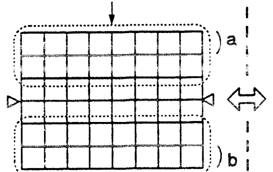
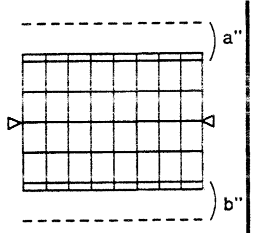
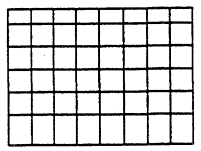
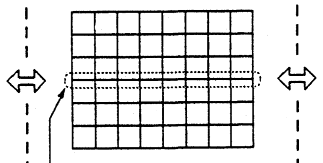
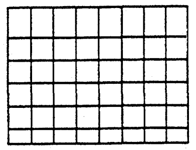
Compensation	Signal and Mark *1	Distorted Screen	Corrected Screen	Distorted Screen	Adjustment Point	
Vertical distortion compensation	V-SKEW 				Observe the horizontal lines in the center of the screen (where there is no V-KEY, V-SKEY nor V-PIN movement), then adjust the horizontal lines to eliminate lean.	To obtain the best possible lines, adjust the horizontal lines in the center of the screen following the adjustment procedure of V-SKEW and V-BOW.
	V-BOW 				Observe the horizontal lines in the center of the screen, then adjust the bowed lines to straight lines.	
	V-KEY 				Observe the horizontal lines in the lower section of the screen (where there is no V-S-KEY movement), then adjust the horizontal lines to eliminate lean.	To eliminate lean, adjust the horizontal lines in the upper and lower sections of the screen following the adjustment procedure of V-KEY, V-S-PIN and V-S-KEY.
	V-S-PIN 				Observe the horizontal lines in the upper and lower sections of the screen, then adjust the bowed lines to straight lines.	
	V-S-KEY 				Observe the horizontal lines in the upper section of the screen, then adjust the horizontal lines to eliminate lean.	
	V-PIN 				Observe the horizontal lines in the upper and lower sections of the screen, then adjust the bowed lines to straight lines.	To eliminate distortion, straighten the horizontal lines in the upper and lower sections of the screen following the adjustment procedure of V-PIN.

Fig. 7-15 Vertical compensation

Compensation	Signal and Mark	Distorted Screen	Corrected Screen	Distorted Screen	Adjustment Point	
Vertical interval compensation	V-LIN 		 Attention point		Converge the horizontal lines in the center of the screen into green lines. At this time, be sure to the same horizontal line interval as upper section as lower section about a central point. However, if the same interval is not to obtained, adjust POSITION, adjust V-LIN and V-S-LIN again.	The horizontal lines in the center of the screen converge into the green line by V-LIN, V-S-LIN and V-POSITION. And also the horizontal lines in the upper and lower sections of the screen converge into the green line by V-SIZE.
	V-S-LIN 	 a' = a , b' = b	Attention point  Attention point	 a" = a , b" = b		
	V-SIZE 	 a' ⟨ a , b' ⟨ b	Attention point  Attention point	 a" ⟩ a , b" ⟩ b	Converge the horizontal lines in the upper and lower sections of the screen into green lines.	
	V-POSITION		 Center of the screen		The horizontal lines of the screen move parallel on the upper and lower by the convergence control of the remote control or main unit. When the horizontal line moves at will, consider the degree of movement.	

Note: KEY is short for KEYSTONE, and LIN for LINEARITY
∇ :denotes points which do not move
▼ :denotes points which hardly move

7.13 WHEN MICROCOMPUTER ASSEMBLY IS REPAIRED

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	When replacing IC307 (X24C08P) in the microcomputer assembly, the PIONEER standard, DPO base and the convergence position are set to the center of the variable ranges. Readjust them according to the specified adjustment procedures. The user settings are also to be made according to the user's preference.			
2	Telop position adjustment	Free video signal	VR301 (M)	Generate test cross signal, and adjust the cross to the center of the screen.

7.14 WHEN MICROCOMPUTER ASSEMBLY IS REPLACED

- Adjust the telop position as described in section 7.13, and perform the user setting.

7.15 WHEN I/O-TEXT ASSEMBLY IS REPAIRED

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	13.5MHz VCO output adjustment	No signal input	L605 (I)	Adjust the oscillation frequency at pin 17 of IC602 in the I/O-TEXT assembly to 13.5MHz ± 100kHz.

7.16 WHEN I/O-TEXT ASSEMBLY IS REPLACED

- No adjustment required.

7.17 WHEN DPO ASSEMBLY IS REPAIRED

- Adjust the DPO sensitivity adjustment as described in section 7.26.

7.18 WHEN DPO ASSEMBLY IS REPLACED

- No adjustment required.

7.19 WHEN DYNAMIC FOCUS ASSEMBLY IS REPAIRED OR REPLACED

- Check the focus (the four corners of the screen). If the focus is not proper, adjust VR1 for the optimum setting.

7.20 WHEN HIGH VOLTAGE CONTROL ASSEMBLY IS REPAIRED OR REPLACED

- Check the H. SIZE, V. SIZE and convergence if required.

7.21 WHEN R, G OR B CRT DRIVE ASSEMBLY IS REPAIRED OR REPLACED

- White balance ought to provide the best picture. If not, adjust the white balance as follows.

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	White balance adjustment	Ordinary broadcasting	Screen (VR1) (R) (B)	Adjust the white if proper adjustment cannot be achieved as follows. Set the COLOR by the remote control to a minimum, adjust the screen VRs to obtain the best picture.

7.22 WHEN CRT ASSEMBLY R, G, OR B IS REPLACED

- The CRT assembly R, G, B replacement procedure is described in Section“8. Replacing the CRT assembly”.
- When one or two tubes are replaced, match the new tubes with the remaining tube. If all three tubes are replaced, first adjust G, and then match the other two tubes with the G tube.

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	Deflection yoke angle and centering adjustment	Cross signal (or the test cross signal for convergence : Refer to Fig. 7-13.)	Centering magnet of deflection yoke of replaced CRT assembly (Refer to Fig. 7-19)	Adjust the deflection yoke angle until the color cross of the replaced CRT assembly is parallel with the color cross of a CRT assembly which has not been replaced.
				Reset the convergence position (by operating CNT-to -MAX (MIN)-to-CNT in FACTORY ADJ mode) when the red or blue CRT assembly is replaced.
				Adjust the centering magnet of the deflection yoke in the replaced CRT assembly until cross becomes converge.
2	Focus adjustment	Cross hatch	Replaced color focus VR (VR1) and lens assembly connected to replaced CRT assembly (Refer to Fig. 7-20 and Fig. 7-21.)	Adjust the focus of the replaced CRT assembly to the optimum condition. (Shifting the convergence position may provide easier observation. Be sure to return it to the original position after the adjustment is completed.)
3	Convergence adjustment		Match the color convergence of the replaced CRT assembly with the color of an assembly which has not been replaced. See Section 7.12.2 CONVERGENCE ADJUSTMENT for details on the matching procedure. (When CRT assembly G is replaced, match the color convergence of the R, G and B.)	
4	White balance	Color bar signal without color signal	Screen VR(VR1) VR651 (R) } Drive VR(V) VR653 (B) }	Set the picture quality to standard by remote control.
				Adjust the replaced color screen VR until grey can be seen in the color of dark area.
				Adjust the replaced color drive VR until the color of bright area becomes white. (When CRT assembly G is replaced, slightly adjust the drive VR [R] and [B] .)
				Adjust the PIONEER Standard Brightness only when the above adjustments have not been successfully effectuated due to the abnormal brightness.
5	PIONEER standard settings	Adjust as described in steps 8 thru 14 in Section 7.6.1.		

7.23 WHEN LENS ASSEMBLY IS REPLACED

- Remove the lenticular sheet, and attach tracing paper with a plastic tape, etc. instead. (Refer to Fig. 7 - 20.) Adjust the focus of the lens assembly newly mounted, by observing the picture shown on the tracing paper.

7.24 WHEN OTHER ASSEMBLIES ARE REPAIRED OR REPLACED

- No adjustment required.

7.25 DPO BASE SETTING

The DPO function features a DPO light-sensitive section in the front control panel designed to judge the level of external light when the front panel DPO switch(S859) is ON, thereby matching the PROJECTION MONITOR RECEIVER picture quality (contrast, color, bright) with the external light.

There are two STANDARD kinds of DPO picture qualities. When the environment is bright, the first DPO quality (DPO LIGHT) is selected. When the environment is dark, the second DPO quality(DPO DARK) is selected. The data on these two DPO qualities are stored in IC307(non-volatile memory).

Hence, if IC307(or peripheral circuits) is repaired or replaced, or if MICROCOMPUTER assembly is replaced, picture quality must be stored in IC307 again.

To store the DPO picture quality data, refer to the operating instructions. The values set at the factory are shown here for reference. These values are subject to change.

- DPO LIGHT
  - ❁ (COLOR) : 0
  - ◑ (CONTRAST) : 0
  - ☼ (BRIGHT) : 0
- DPO DARK
  - ❁ (COLOR) : −2
  - ◑ (CONTRAST) : −15
  - ☼ (BRIGHT) : +3

Note: For this adjustment, it is not necessary to activate FACTORY ADJ mode.

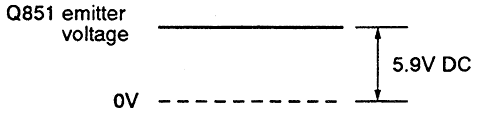
7.26 DPO SENSITIVITY ADJUSTMENT

The sensitivity of the DPO light-sensitive section is adjusted to determine the level of external light at which the DPO feature is activated. This adjustment is made by VR851 in the DPO assembly (refer to Fig. 7 - 21), and should be carried out according to the customer's preferences. The adjustment procedure used at the factory is given for reference.

(1) Using an incandescent light bulb as the light source, light is beamed directly into the DPO light sensitive section with a light - intensity level of 50 lux at the DPO.

(2) Switch the DPO switch(S859) on. "DPO ON" appears on the screen.

(3) DPO assembly VR851 is adjusted to obtain a voltage of 5.9V(± 0.1V) at the Q851 emitter.



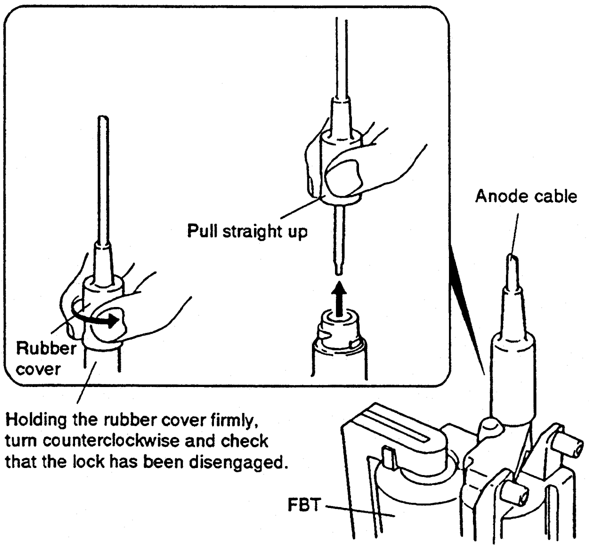
7.27 ANODE VOLTAGE MEASURING METHOD

Disconnect the FBT anode cable as outlined in Fig. 7 - 16. Measure at the point where the cable enters the FBT.

Caution: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, POWER SUPPLY - DEFLECTION assembly).

> **SERVICEMAN WARNING**
>
> Before removing the anode cable, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.

Note:Determine the extent of the rubber cover before disconnecting the cable.



Holding the rubber cover firmly, turn counterclockwise and check that the lock has been disengaged.

Note :When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

Fig. 7-16 Disconnecting the anode cable

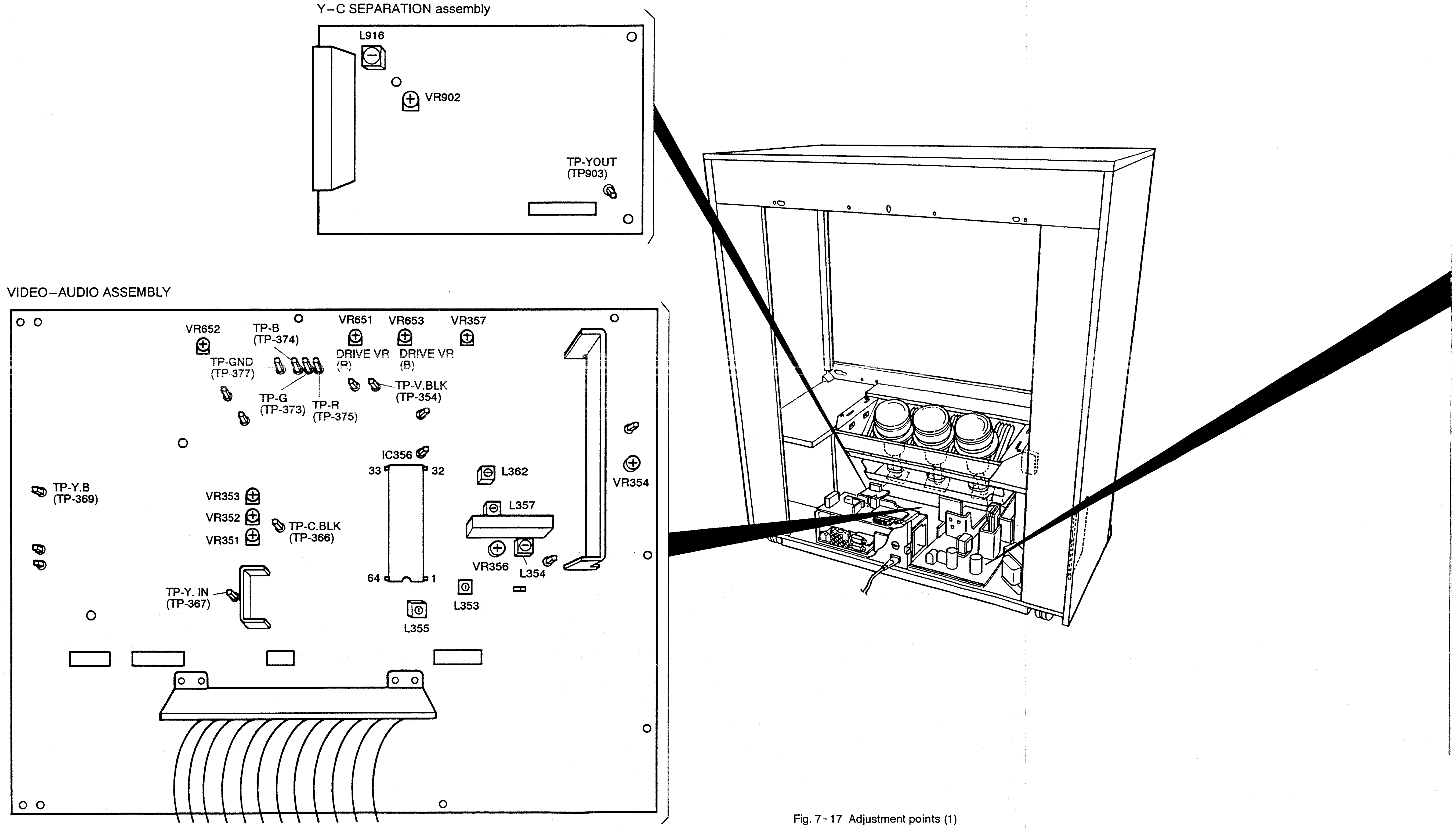

Y-C SEPARATION assembly
L916
VR902
TP-YOUT
(TP903)
VIDEO-AUDIO ASSEMBLY
VR652
TP-B
(TP-374)
VR651
VR653
VR357
TP-GND
(TP-377)
DRIVE VR
(R)
DRIVE VR
(B)
TP-V.BLK
(TP-354)
TP-G
(TP-373)
TP-R
(TP-375)
IC356
33
32
L362
VR354
TP-Y.B
(TP-369)
VR353
VR352
VR351
TP-C.BLK
(TP-366)
L357
VR356
L354
64
1
TP-Y. IN
(TP-367)
L353
L355

Fig. 7-17 Adjustment points (1)

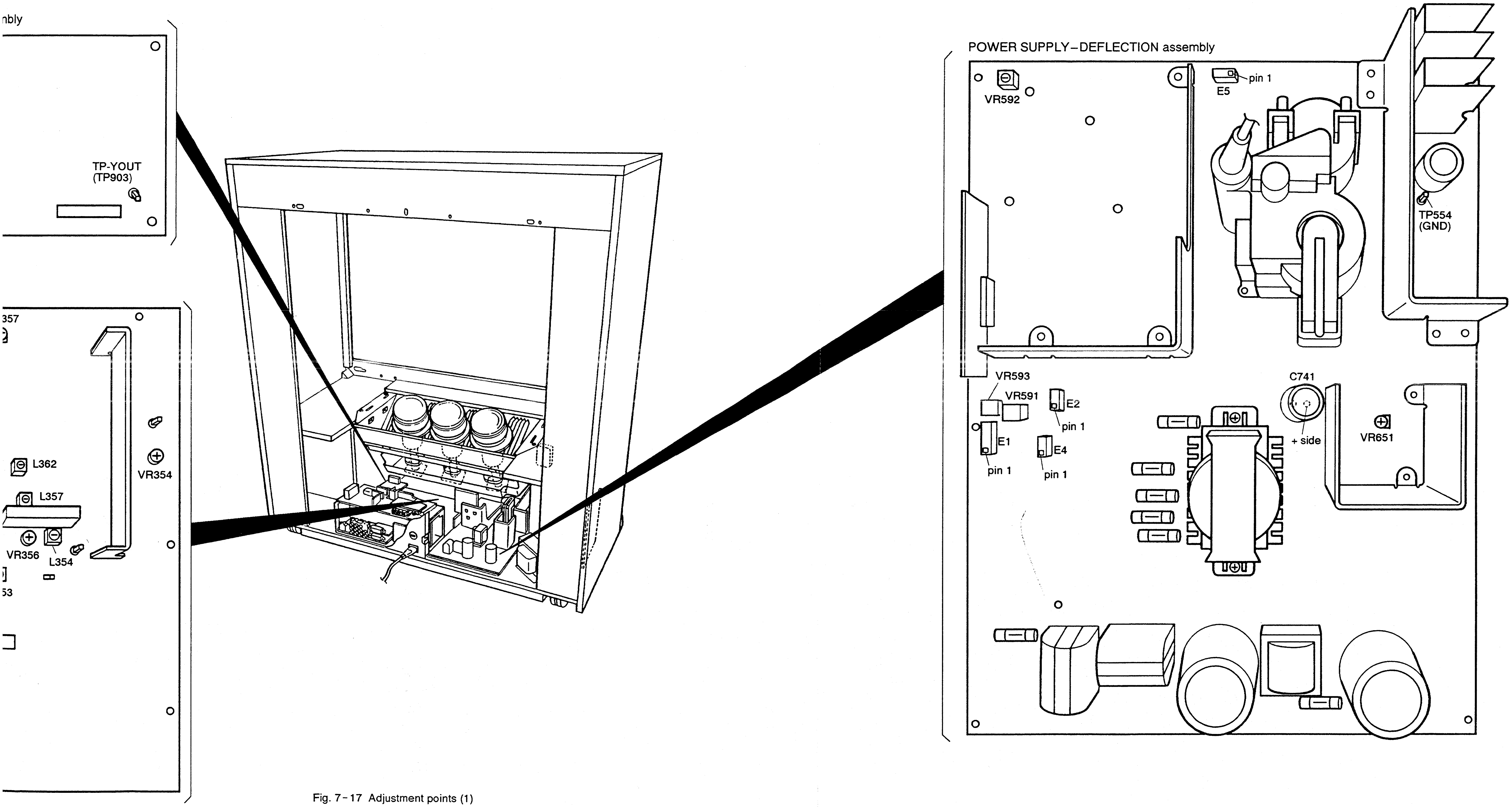

nbly
TP-YOUT
(TP903)
357
L362
L357
VR354
VR356
L354
53
POWER SUPPLY-DEFLECTION assembly
VR592
pin 1
E5
TP554
(GND)
VR593
VR591
E2
pin 1
E1
pin 1
E4
pin 1
C741
+ side
VR651

Fig. 7-17 Adjustment points (1)

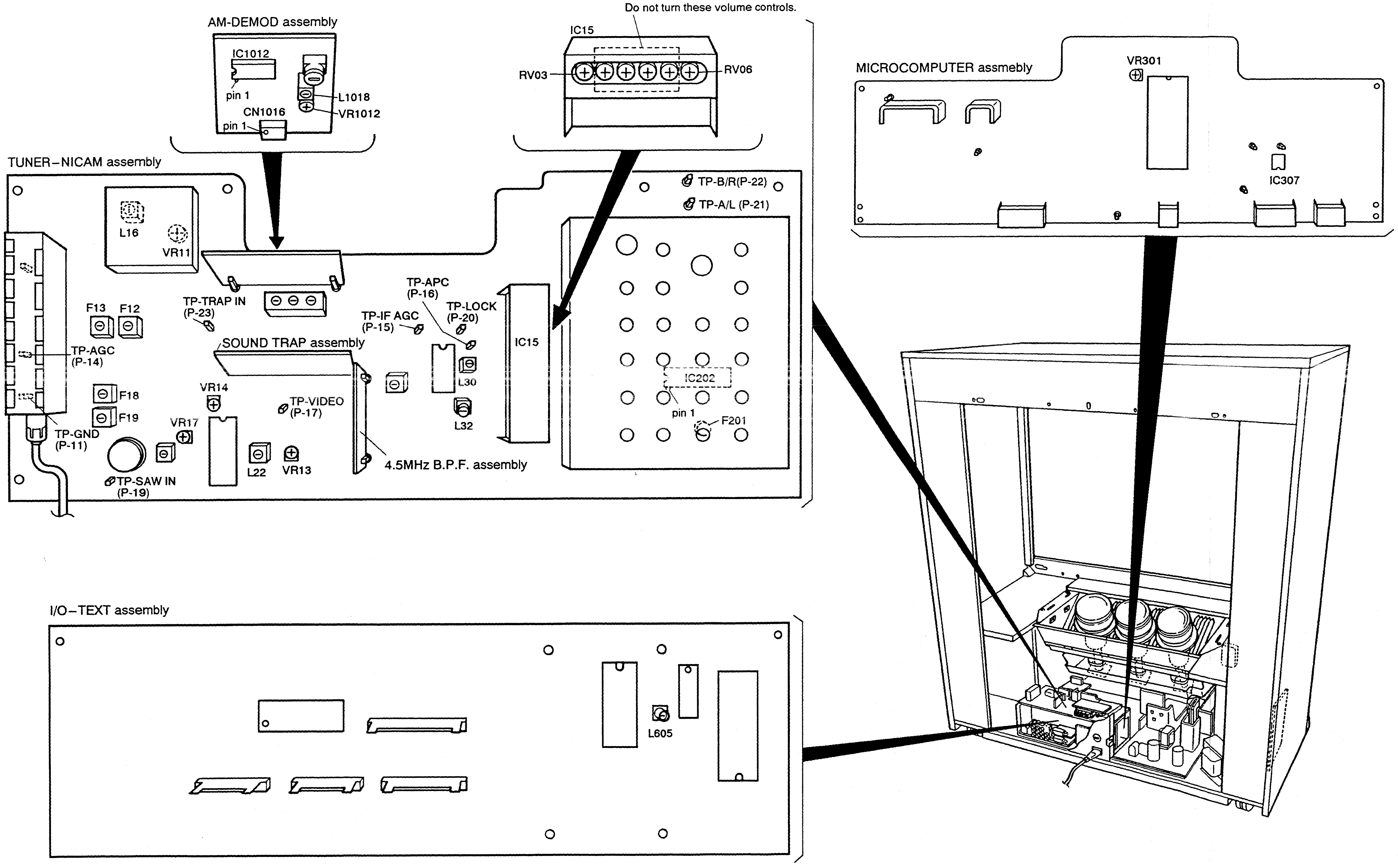

Do not turn these volume controls.
AM-DEMOD assembly
IC1012
pin 1
CN1016
pin 1
L1018
VR1012
IC15
RV03
RV06
TUNER–NICAM assembly
L16
VR11
F13
F12
TP-TRAP IN
(P-23)
TP-AGC
(P-14)
SOUND TRAP assembly
TP-APC
(P-16)
TP-IF AGC
(P-15)
TP-LOCK
(P-20)
IC15
TP-B/R(P-22)
TP-A/L (P-21)
F18
F19
VR14
VR17
TP-VIDEO
(P-17)
L30
L32
IC202
pin 1
F201
TP-GND
(P-11)
TP-SAW IN
(P-19)
L22
VR13
4.5MHz B.P.F. assembly
MICROCOMPUTER assmebly
VR301
IC307
I/O–TEXT assembly
L605

Fig. 7-18 Adjustmemt point (2)

Deflection yoke
Spacer

turn these volume controls.

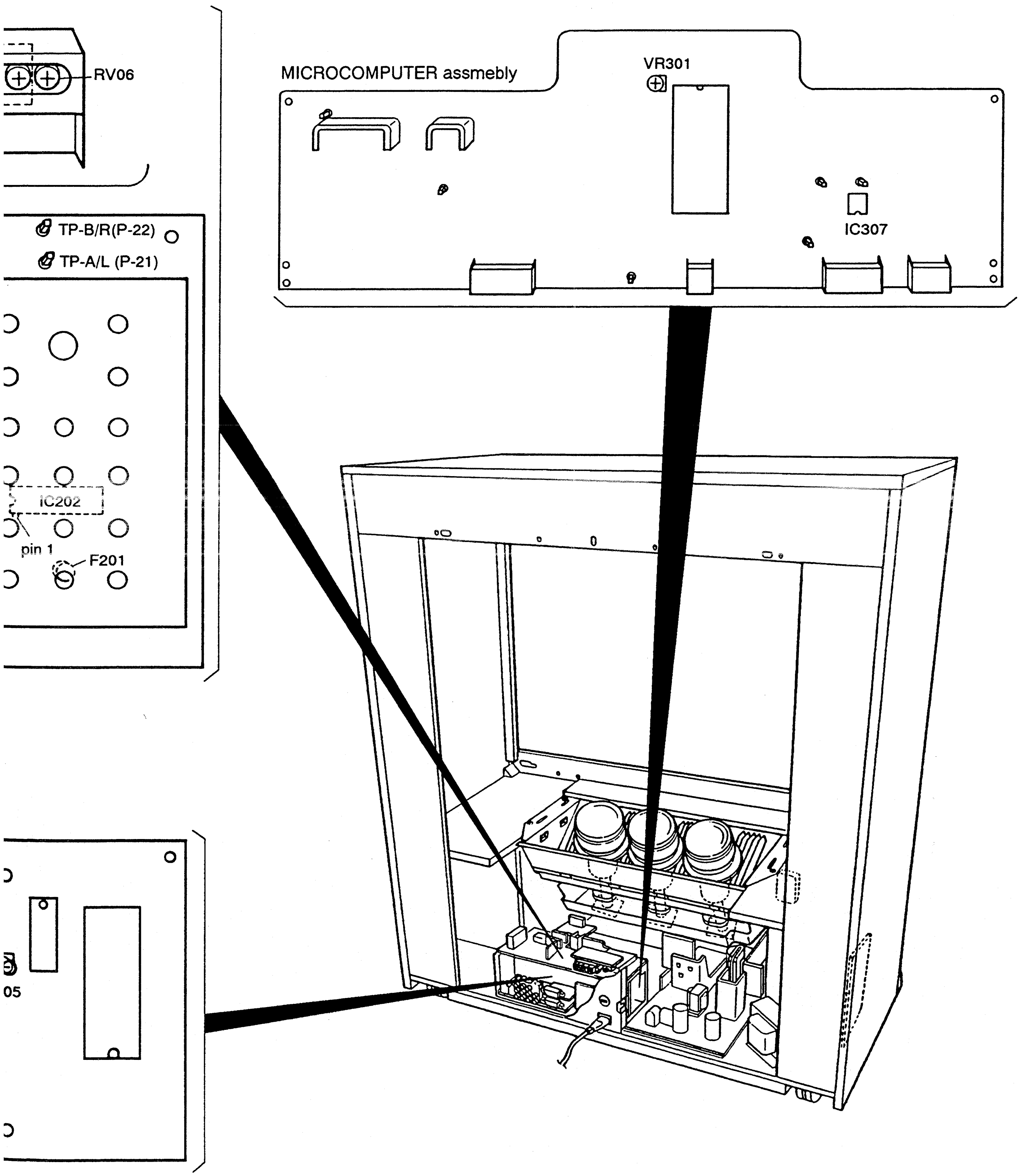

RV06
MICROCOMPUTER assmebly
VR301
IC307
TP-B/R(P-22)
TP-A/L (P-21)
IC202
pin 1
F201
05

Fig. 7-18 Adjustmemt point (2)

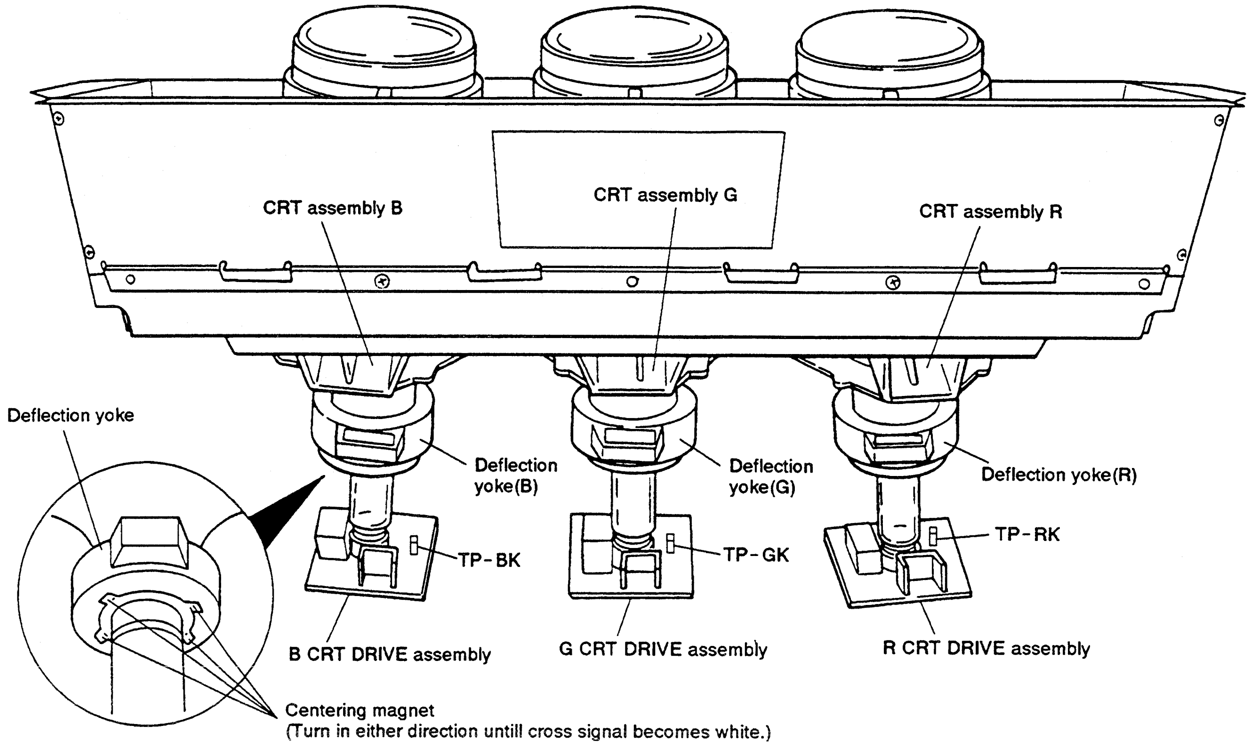

CRT assembly B
CRT assembly G
CRT assembly R
Deflection yoke
Deflection yoke(B)
Deflection yoke(G)
Deflection yoke(R)
TP-BK
TP-GK
TP-RK
B CRT DRIVE assembly
G CRT DRIVE assembly
R CRT DRIVE assembly
Centering magnet
(Turn in either direction untill cross signal becomes white.)

Fig. 7-19 Adjustment point (3)

Note : Attach a sheet of translucent paper, such as tracing paper, while inserting spacers 7 mm thick to align it with the regular position of the screen surface. Use spacers which provide the same thickness at both the right and left sides.

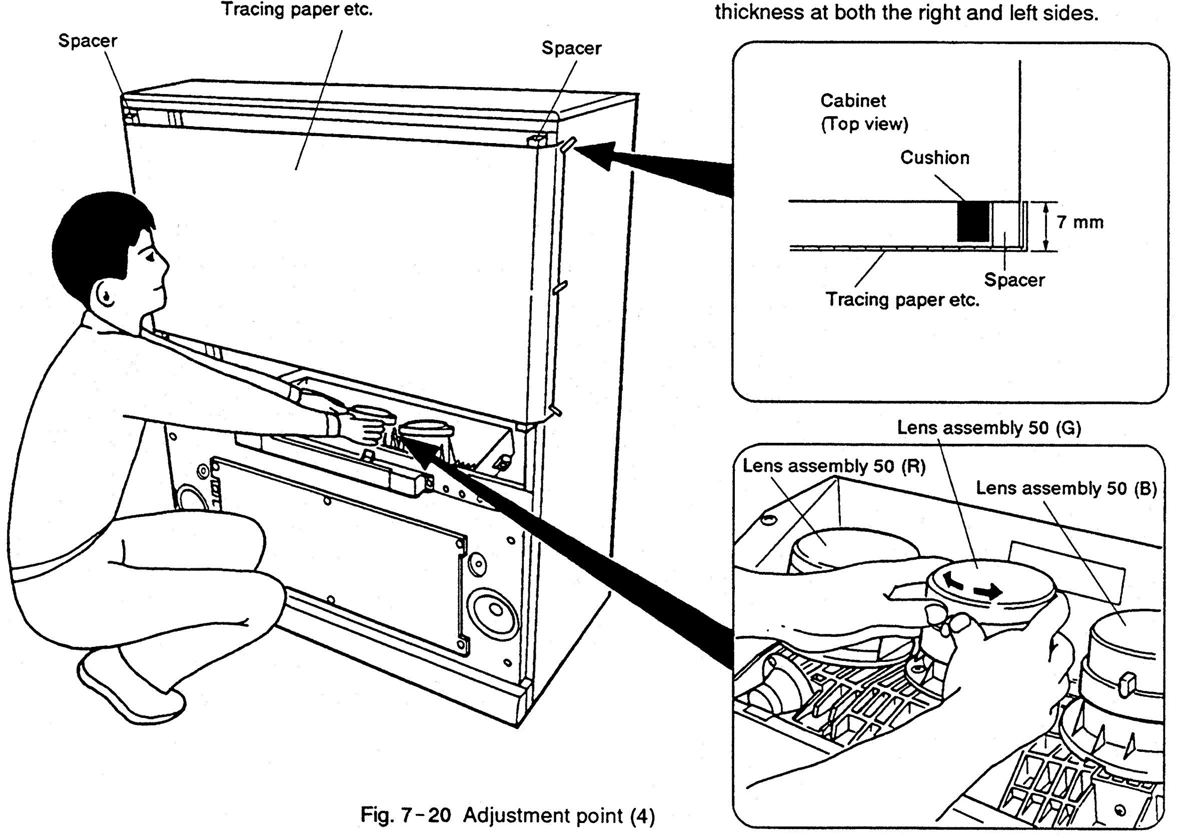

Tracing paper etc.
Spacer
Spacer
Cabinet
(Top view)
Cushion
7 mm
Spacer
Tracing paper etc.
Lens assembly 50 (G)
Lens assembly 50 (R)
Lens assembly 50 (B)

Fig. 7-20 Adjustment point (4)

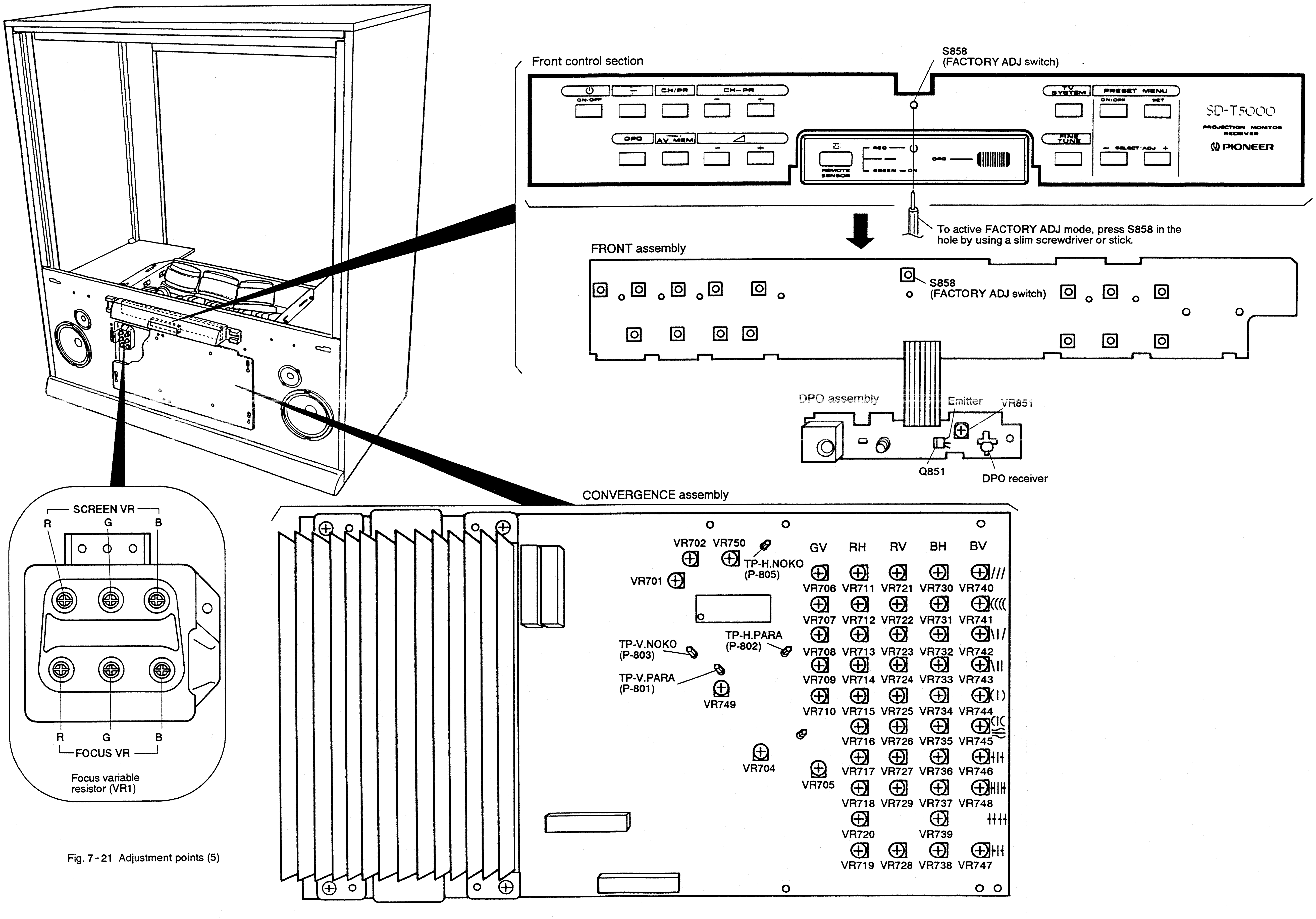

Front control section
S858
(FACTORY ADJ switch)
ON/OFF
CH/PR
CH−PR
DPO
AV MEM
REMOTE SENSOR
RED
GREEN
ON
TV SYSTEM
PRESET MENU
SET
FINE TUNE
SELECT ADJ
SD-T5000
PROJECTION MONITOR RECEIVER
PIONEER
To active FACTORY ADJ mode, press S858 in the hole by using a slim screwdriver or stick.
FRONT assembly
S858
(FACTORY ADJ switch)
DPO assembly
Emitter
VR851
Q851
DPO receiver
CONVERGENCE assembly
VR702
VR750
TP-H.NOKO
(P-805)
VR701
GV
RH
RV
BH
BV
VR706
VR711
VR721
VR730
VR740
VR707
VR712
VR722
VR731
VR741
TP-H.PARA
(P-802)
TP-V.NOKO
(P-803)
TP-V.PARA
(P-801)
VR708
VR713
VR723
VR732
VR742
VR709
VR714
VR724
VR733
VR743
VR749
VR710
VR715
VR725
VR734
VR744
VR716
VR726
VR735
VR745
VR704
VR705
VR717
VR727
VR736
VR746
VR718
VR729
VR737
VR748
VR720
VR739
VR719
VR728
VR738
VR747
SCREEN VR
R
G
B
R
G
B
FOCUS VR
Focus variable resistor (VR1)

Fig. 7-21 Adjustment points (5)

7. REGLAGES

- Le SD-T5000 est conforme aux systèmes conventionnels de télévision M, B/G, I, D/K, L et L', ainsi que les systèmes couleur NTSC, NTSC4.43, PAL et SECAM.
  Les différences dans les ajustements entre les systèmes sont clairement expliquées dans le texte qui suit. Quand l'appareil est utilisé dans un système après avoir été ajusté pour un autre, l'image et le son vont changer.
  Dans ce cas, réajuster l'appareil en fonction du système en vigueur.
- Il est vivement recommandé d'ajuster l'appareil en orientant l'écran vers l'est ou l'ouest.
- Les articles des ajustements sont décrits comme suit.

7.1 MODE FACTORY ADJ
7.2 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REPARE
7.3 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REMPLACE
7.4 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REPARE
7.5 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REMPLACE
7.6 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REPARE
7.7 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REMPLACE
7.8 QUAND L'ASSEMBLAGE TUNER-NICAM EST REPARE
7.9 QUAND L'ASSEMBLAGE TUNER-NICAM EST REMPLACE
7.10 QUAND L'ASSEMBLAGE AM-DEMOD EST REPARE
7.11 QUAND L'ASSEMBLAGE AM-DEMOD EST REMPLACE
7.12 QUAND L'ASSEMBLAGE DE CONVERGENCE EST REPARE OU REMPLACE
7.13 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REPARE
7.14 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REMPLACE
7.15 QUAND L'ASSEMBLAGE I/O-TEXT EST REPARE
7.16 QUAND L'ASSEMBLAGE I/O-TEXT EST REMPLACE
7.17 QUAND L'ASSEMBLAGE DPO EST REPARE
7.18 QUAND L'ASSEMBLAGE DPO EST REMPLACE
7.19 QUAND L'ASSEMBLAGE DYNAMIC FOCUS EST REPARE OU REMPLACE
7.20 QUAND L'ASSEMBLAGE HIGH VOLTAGE CONTROL EST REPARE OU REMPLACE
7.21 QUAND L'ASSEMBLAGE R, G OU B CRT DRIVE EST REPARE OU REMPLACE
7.22 QUAND L'ASSEMBLAGE CRT R, G OU B EST REPARE OU REMPLACE
7.23 QUAND L'ASSEMBLAGE DE L'OBJECTIF EST REMPLACE
7.24 QUAND D'AUTRES ASSEMBLAGES SONT REPARES OU REMPLACES
7.25 REGLAGE DE BASE DPO
7.26 AJUSTEMENT DE LA SENSIBILITE DPO
7.27 METHODE DE MESURE DE LA TENSION ANODIQUE

- Ces procédures d'ajustement sont décrites séparément pour les réglages qui suivent l'échange d'assemblage et les réglages qui suivent les réparations.
- Lors du remplacement des assemblages, toujours utiliser les remplacements recommandés.
- Les symboles entre parenthèses qui jouxent la position de réglage ( ) indiquent l'assemblage devant être ajusté.

D : Assemblage POWER SUPPLY-DEFLECTION
VR1 : Résistance à mise au point variable
V : Assemblage VIDEO-AUDIO
A : Assemblage AM-DEMOD
C : Assemblage CONVERGENCE
M : Assemblage MICROCOMPUTER
T : Assemblage TUNER-NICAM
IC : IC15 de l'assemblage TUNER-NICAM
Y : Assemblage Y-C SEPARATION
I : Assemblage I/O-TEXT

- Les points d'ajustement et les bornes TP de chaque assemblage sont illustrés aux Fig. 7-17 à 7-21.

Fig. 7-17:
Assemblage VIDEO-AUDIO, assemblage Y-C SEPARATION et assemblage POWER SUPPLY-DEFLECTION.

Fig. 7-18:
Assemblage MICROCOMPUTER, assemblage I/O-TEXT, assemblage TUNER-NICAM et assemblage AM-DEMOD.

Fig. 7-19:
Assemblages R, G OU B CRT DRIVE et bloc de balayage.

Fig. 7-20:
Assemblage d'objectif (rouge, vert, bleu).

Fig. 7-21:
Assemblage CONVERGENCE, panneau avant, assemblage FRONT et résistance à mise au point variable.

- Régler les bornes d'entrée du panneau arrière comme suit, sauf si indiqué autrement.
  Signal VIDEO: Borne AV4 VIDEO
  Signal AUDIO: Borne AV4 AUDIO
- Régler la qualité de l'image sur la norme par la télécommande, sauf si indiqué autrement.

7.1 MODE FACTORY ADJ

● Du mode FACTORY ADJ

Le mode FACTORY ADJ est activé/désactivé en enclenchant l'interrupteur S858 par le trou central de la section de réglage avant avec un bâtonnet ou un objet similaire (voir Fig. 7-21).

Le mode FACTORY ADJ se compose du mode ADJUSTMENT RANGE (plage de réglage) et du mode ADJUSTMENT OFFSET (décalage de réglage).

Le mode ADJUSTMENT RANGE est utilisé pour vérifier rapidement la variation des différents réglages d'image et de son (couleur, teinte, contraste, luminosité, netteté, graves, aigus, balance et convergence), tandis que le mode ADJUSTMENT OFFSET est utilisé pour régler la qualité de l'image (norme PIONEER) quand l'utilisateur a défini le réglage standard par la télécommande.

Quand le mode FACTORY ADJ est activé et qu'une opération CNT à MIN à CNT ou CNT à MAX à CNT est exécutée en mode ADJUSTMENT RANGE, toutes les valeurs de mémoire AV réglées par l'utilisateur sont effacées (reviennent à "0") et la position de convergence est réinitialisée au centre de la plage de variation.

Après avoir désactivé le mode FACTORY ADJ, recommencer le réglage des valeurs de mémoire AV et de la position de convergence, comme requis.

● Comment utiliser le mode FACTORY ADJ

① Mode ADJUSTMENT RANGE

Quand l'interrupteur S858 de la section de réglage avant (voir Fig. 7-21) est enclenché pour activer le mode FACTORY ADJ, l'écran affiche le mode ADJUSTMENT RANGE comme illustré à la Fig. 7-1①.

Dans ce mode, les points du centre (CNT), du minimum (MIN) et du maximum (MAX) des plages de réglage variable de la qualité de l'image, de la qualité du son et de la position de convergence peuvent être facilement vérifiés (sans devoir changer les réglages courants avec les touches + ⊿).

Pour procéder à la vérification, utiliser les touches numériques de la télécommande qui correspondent aux fonctions de réglage de l'imge et du son comme expliqué ci-dessous.

$\boxed{1}$:COLOR
$\boxed{2}$:TINT
$\boxed{3}$:CONTR
$\boxed{4}$:BRITE
$\boxed{5}$:SHARP
$\boxed{7}$:BASS
$\boxed{8}$:TREBL
$\boxed{9}$:BALNC
$\boxed{0}$:CONVR (Convergence)

Par exemple, lors de la vérification de l'article TINT (teinte), appuyer sur la touche $\boxed{2}$ de la télécommande.

A chaque poussée sur cette touche $\boxed{2}$, les points CNT, MIN et MAX sont affichés cycliquement et dans cet ordre.

Actionner les autres touches de la même manière pour les autres articles (lors de la vérification des réglages de l'image et du son, utiliser un signal dont les variations sont aisément reconnaissables).

Remarques::

- $\boxed{9}$:Lors de la vérification de BALNC (balance);
  CNT : Pour sortir les deux canaux.
  MIN : Pour sortir le canal droit uniquement.
  MAX : Pour sortir le canal gauche uniquement.
- $\boxed{0}$:Lors de la vérification de CONVR (convergence);
  CNT : Pour la position centrale.
  MIN : Pour un déplacement en haut, à droite.
  MAX : Pour un déplacement en bas, à gauche.

② Mode ADJUSTMENT OFFSET (mode de réglage standard PIONEER)

Par enclenchement de la touche MUTE de la télécommande, le mode passe de ADJUSTMENT RANGE à ADJUSTMENT OFFSET, comme illustr à la Fig. 7-1②.

Le réglage de l'image(COLOR, TINT, CONTR, BRITE et SHARP) ajusté dans ce mode devient celui choisi comme réglage standard (norme PIONEER) avec la télécommande.

Pour procéder au réglage, choisir l'article ajuster avec la touche spécifiée ou les touches numériques($\boxed{1}$ à $\boxed{5}$), puis ajuster l'article sélectionné avec les touches + ⊿ , en fonction de la procédure d'ajustement spécifiée. La valeur de réglage de référence est affichée dans le coin inférieur droit de l'écran.

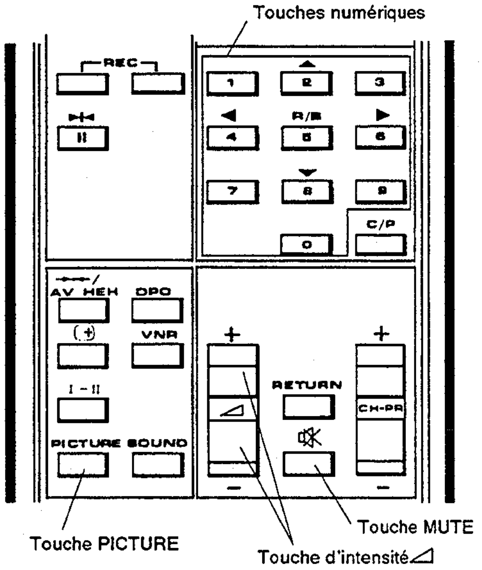
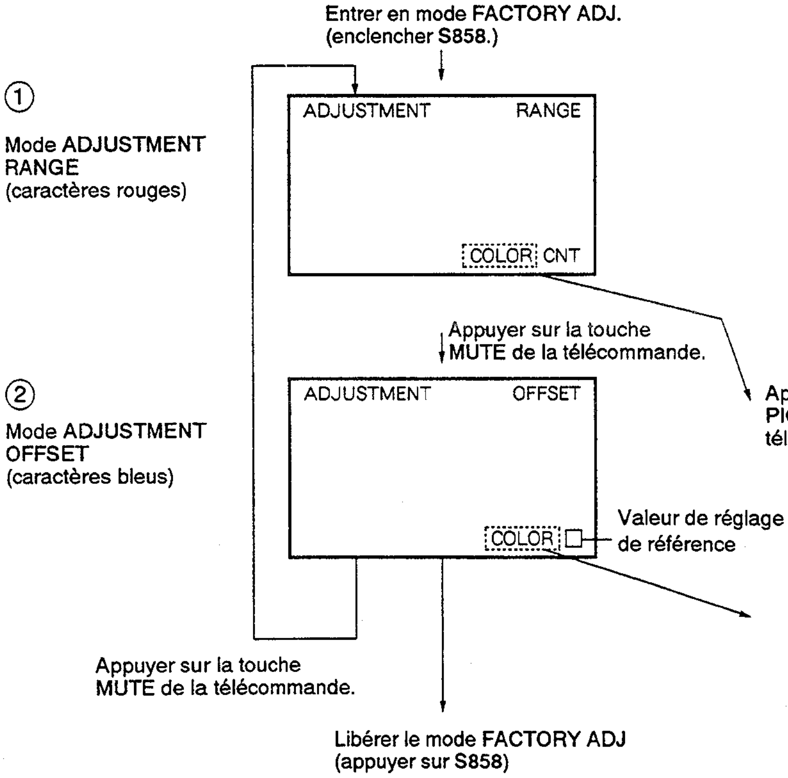

Touches numériques
REC
1
2
3
4
R/■
5
6
7
8
9
0
C/P
AV HEH
DPO
VNR
I-II
PICTURE
SOUND
+
RETURN
CH-PR
−
Touche PICTURE
Touche MUTE
Touche d'intensité◿

Fig. 7-2
Disposition des touches sur la télécommande


ADJUSTMENT RANGE
COLOR CNT
ADJUSTMENT OFFSET
COLOR □

Entrer en mode FACTORY ADJ.
(enclencher S858.)

①

Mode ADJUSTMENT RANGE
(caractères rouges)

Appuyer sur la touche MUTE de la télécommande.

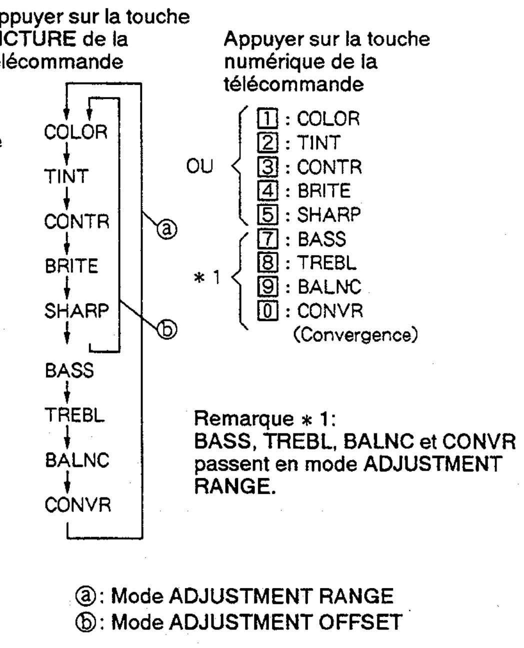
②

Mode ADJUSTMENT OFFSET
(caractères bleus)

Valeur de réglage de référence

Appuyer sur la touche MUTE de la télécommande.

Libérer le mode FACTORY ADJ
(appuyer sur S858)


COLOR
TINT
CONTR
BRITE
SHARP
BASS
TREBL
BALNC
CONVR
ⓐ
ⓑ
OU
＊1

Appuyer sur la touche PICTURE de la télécommande

Appuyer sur la touche numérique de la télécommande

1 : COLOR
2 : TINT
3 : CONTR
4 : BRITE
5 : SHARP
7 : BASS
8 : TREBL
9 : BALNC
0 : CONVR (Convergence)

Remarque ＊1:
BASS, TREBL, BALNC et CONVR passent en mode ADJUSTMENT RANGE.

ⓐ: Mode ADJUSTMENT RANGE
ⓑ: Mode ADJUSTMENT OFFSET

Fig.7-1 Affichage du mode FACTORY ADJ

7.2 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REPARE

Remarque: VR591 et VR593 sont protégées par un blindage (ANH1166) et ne peuvent être ajustées. Ne jamais tenter de tourner ces potentiométres en enlevant leur blindage sinon, la sensibilité du circuit de protection contre les rayons X et la tension anodique risque d' être affecté.

- Les points de test de réglage (TP) sont situés dans l'assemblage POWER SUPPLY - DEFLECTION.

7.2.1 Section Alimentation

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Alimentation 135V	Signal monoscope	VR651(D)	Ajuster la tension des deux côtés de C741 (assemblage POWER SUPPLY-DEFLECTION) sur 135V ± 1V.

- **Vérification des tensions de sortie**

Aprés avoir effetué l'ajustement sur +135V, vérifier les tensions comme suit.

Point de mesure	Tension	Point de mesure	Tension
E1 +13.5V (broche 9 ou 10) pour GND (broche 11)	+13,5V ± 0,5V	E2 +35V (broche 3 ou 4) pour GND (broche 1 ou 2)	+32V ± 5V (moins de +40V)
E1 +8V (broche 7 ou 8) pour GND (broche 11)	$+8V^{+2V}_{-1V}$		
E1 +30V (broche 13) pour GND (broche 11)	+30V ± 5V	E4 +25V (broche 5) pour V.GND (broche 4 ou 3)	+25V ± 3V
E1 +39V (broche 14) pour GND (broche 11)	+39V ± 3V	E4 − 24V (broche 1) pour V.GND (broche 4 ou 3)	− 24V ± 3V
E5 H.T.+ (broche 4) pour H.T. − (broche 5)	+6,25V ± 0,25V	E5 +220V (broche 1) pour TP554 (GND)	+220V ± 20V

7.2.2 Section déflexion

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage de la mise au point	Signal de hachure en croix	VR de mise au point (VR1)	Optimiser la mise au point de chaque assemblage CRT. (Il est plus facile de juger la mise au point si le rouge et le bleu sont déplacés en tournant les réglages de convergence de la télécommande comme illustré à la Fig. 7-13. Remettre ces réglages sur leur position d'origine après avoir terminé le réglage de la mise au point.)
2	Réglage de la taille horizontale	Signal monoscope ou émission ordinire	VR592(D)	Ajuster les cadres droit et gauche aux valeures suivantes. Lors du réglage avec une émission ordinaire, prendre garde à ne pas provoquer de noircissement. •NTSC et NTSC 4.43: Droite = 92.5 ± 2%, Gauche = 92 ± 2% •PAL et SECAM: Droite = 94.5 ± 2%, Gauche =93.5 ± 2% Aprés cet ajustement, vérifier les réglages de convergence, V. SIZE et H. BLK .
3	Réglage de la balance du blanc	Emission ordinaire	Ecran (VR1) (R) (B)	Ajuster le blanc s'il le réglage adéquat ne peut etre obtenu comme suit. Régler COLOR (couleur) par la télécommande sur le minimum, ajuster les VR (résistances variables) de l'écran pour obtenir la meilleure image possible.

7.3 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REMPLACE

Remarque: VR591 et VR593 de l'assemblage POWER SUPPLY-DEFLECTION sont fournies en tant que pièces de rechange et sont protégées par un blindage (ANH1166). Ne jamais tenter d'enlever ce blindage (ANH1166).

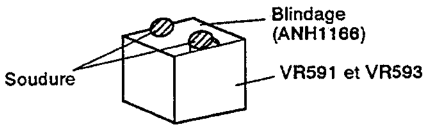


Fig. 7-3 Blindage

7.3.1 Section alimentation

- Aucun ajustement n'est requis.

7.3.2 Section déflexion

- Ajuster la mise au point, la taille horizontale et la balance du blanc comme décrit à la section 7.2.2.

7.4 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REPARE

- Ajustement du système NTSC uniquement.

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage du filtre en peigne	Barre de couleur	VR902 (Y) L916 (Y)	Ajuster de façon que les éléments du signal couleur à TP-OUT (TP-903) de l'assemblage Y-C SEPARATION soient réduits au maximum.
2	Vérifier la norme PIONEER	Si l'on n'obtient pas la meilleure image possible, ajuster comme décrit à la section 7.6.		

7.5 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REMPLACE

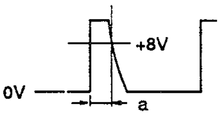
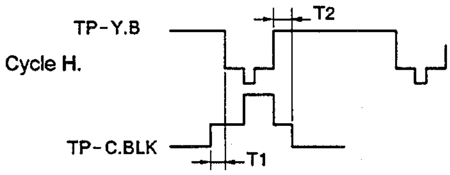
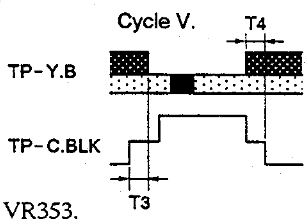
- Aucun ajustement n'est requis.

7.6 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REPARE

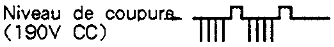
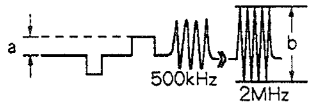
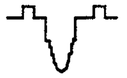
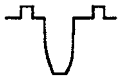
- Les points de test de réglage(TP) se situent sur l'assemblage VIDDEO-AUDIO, sauf si spécifié autrement..
- Avant de procéder au réglage, vérifier le réglage du filtre en peigne, décrit à la section 7.4. (pour le systéme NTSC uniquement)

7.6.1. Procédure de réglage

- Le étape 5 à 6 est décrit séparément dans un autre tableau. Voir à la section 7.6.2 à 7.6.3.

N° d'étape	Article de riglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage V. SIZE *1	signal monoscope	VR357 (V)	Ajuster les cadres supérieur et inférieur aux valeurs suivantes. Lors du réglage avec une émission ordinaire, prendre garde à ne pas noircir l'image. • NTSC et NTSC 4.43: Supérieur :91% ± 3%, Inférìieur :95% ± 3% • PAL et SECAM: Supérieur :92% ± 3%, Inférìieur :94 ± 3% Après cet ajustement, vérifier les réglages de covergence et H. SIZE.
2	Réglage de largeur V. BLK (suppression verticale) (1) *1	signal 100% blanc	VR354 (V)	Ajuster le niveau TP-V. BLK (TP-354) la largeur de l'impulsion, sur "a", pour devenir la valeur spécifée ci-dessous, au point +8V. Forme d'onde de TP-354  •NTSC et NTSC 4.43 a=1,2msec •PAL a=1,2msec ± 60 µ sec •SECAM a=1,2msec
3	Réglage de largeur H. BLK (suppression horizontale)	signal 100% blanc	VR352 (V)	Tout en observant simultanément TP-Y.B(TP-369) et TP-C.BLK(TP-366), ajuster T1 dans le cycle H sur la valeur spécifiée ci-dessous. Aprés avoir réglé T1, vérifier que T2 présente la valeur spécifiée ci-dessous. • Avec NTSC et NTSC 4.43: T1=1,2 µ sec ± 200nsec, T2=2,4 µ sec ± 400nsec • Avec PAL et SECAM: T1=1,0 µ sec ± 400nsec, T2=1,8 µ sec ± 400nsec 
4	Réglage de largeur V. BLK (suppression verticale) (2) *1	signal 100% blanc	VR351 (V) VR353 (V)	Observer le cycle V. avec le réglage de l'étape 3, ajuster T3 sur la valeur spécifiée ci-dessouse. Le réglage de T3 terminé , vérifier que T4 présente la valeur spécifiée ci-dessous. ① Pour le système NTSC ou NTSC4.43 Ajuster T3 et T4 aux valeurs suivantes avec VR351. T3 = 300 µ sec ± 50 µ sec T4 = 390 µ sec ± 100 µ sec Si un signal du système PAL ou SECAM est reçu après ce réglage, la valeur réglée ② (VR353) est déviée. Ajuster VR353 avec PAL ou SECAM SG obteinir la valeur ② indiquée ci-dessous. ② Pour le système NTSC ou NTSC4.43 Ajuster T3 et T4 aux valeurs suivantes avec VR353. T3 = 350 µ sec ± 50 µ sec T4 = 500 µ sec ± 100 µ sec 

*1: Quand le réglage V.SIZE est effectué, veiller à vérifier les réglages V.BLK (1) et (2).

N° d'étape	Article de réglage		Signal d'entrée	Point de réglage	Procédure de réglage
5	Réglage du système PAL		Ajuster la ligne de retard du verre du démodulateur PAL, comme décrit à la section 7.6.2(réglage pour le système PAL uniquement).		
6	Réglage du système SECAM		Ajuster la bobine SECAM IDENT, la bobine de détection et le filtre de sonnerie(BELL FILTER) comme décrit à la section 7.6.3.(réglage pour le système SECAM uniquement).		
7	Réglage de la balance du blanc		Signal de barre couleur sans signal couleur	VR d'écran (R),(B) (VR1)	Ajuster les VR de l'écran (R) et (B) jusqu'à ce que le gris devienne visible dans la couleur de la zone sombre (ne pas modifier la résistance variable du vert à cette étape).
				VR651(R) VR653(B) VR d'entraînement(V)	Avec la VR d'entraînement, ajuster la couleur de la zone claire sur le blanc.
8	Réglage standard PIONEER	Régler sur le mode de réglage standard PIONEER du mode FACTORY ADJ. Quand le réglage est terminé, repasser à l'état normal).			
9		Réglage de la luminosité	Signal de hachure en croix	COLOR (*2)	Minimiser la couleur par la télécommande.
				BRITE (*2)	Ajuster le niveau de coupure à TP-RK de l'assemblage R. CRT DRIVE (entraînement du tube cathodique rouge) sur 190 V CC (aprés le réglage, vérifier la balance du blanc).  (Après cet ajustement, ajuster la couleaur comme décrit à la étap 4.)
10		Réglage de la netteté	Multi salve	SHARP (*2)	A TP-G (TP-373), régler le taux de b (valeur crête à crête à 2 MHz) sur a (niveau du noir au blanc) de ala manière suivante. •Avec NTSC et NTSC 4.43 a : b = 2 : 2,7 (+2,6dB) •Avec PAL a : b = 2 : 2,6 (+2,3dB) •Avec SECAM a : b = 2 : 2,7 (+2,6dB) 
11		Réglage de la couleur	Barre de couleur	COLOR (*2)	Ajuster l'écran sur la condition optimale.
12		Réglage de la teinte (*3)		TINT (*2)	Ajuster l'écran sur la condition optimale.
13		Réglage du contraste	Signal libre	CONTR (*2)	Ajuster l'écran sur la condition optimale.
14				—	A TP-BK de l'assemblage B. CRT DRIVE (entraînement du tube cathodique bleu), vérifier que le signal présente la forme suivante.  Onde formée  Onde sans forme
15	Réglage de traînage du bleu		Signal en croix	—	Ajuster la sortie SG du signal en croix d'entrée au niveau maximum.
					Maximiser le contraste avec la télécommande.
				VR652 (V)	Tourner VR652 à fond dans le sens des aiguilles d'une montre (qui provoque un traînage du bleu).
					Tourner VR dans le sens des aiguilles d'une montre jusqu'à ce que le traînage du bleu disparaisse de la ligne verticale de la croix sur l'écran.

*2: Ajuster avec la télécommande.
*3: Ajuster pour les système NTSC et NTSC 4.43.

7.6.2 Ajustement du système PAL

- Cet ajustement est indépendant du tableau de la section 7.6.1. car il n'est valable que pour le système PAL.
- L'ajustement requiert le motif DEM.
- Si le réglage est mal réalisé, les couleurs changent à chaque ligne de balayage et ce phénomène ne peut être decelé qu'avec le motif DEM.

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
5-1	Réglage de ligne de retard du verre pour le démodulateur PAL	Motif PAL DEM	—	Régler l'oscilloscope comme suit: H=2mS/div; V=100 mV/div. Observer les formes d'onde à la broche 60(R-Y IN) et à la broche 62(B-Y IN) de IC356.
5-2			L354 (V)	Ajuster de sorte que la forme d'onde de la zone de mesure 1 de la Fig. 7-5 (Fig. 7-6 a) soit comme illustré à la Fig. 7-6 b.
5-3			VR356 (V)	Ajuster de sorte que la forme d'onde de la zone de mesure 2 de la Fig. 7-5 soit comme illustré à la Fig. 7-6 c.
5-4	Répéter les étapes 5-2 et 5-3 jusqu'à obtention d'une image optimale. Ajuster de façon que la zone de mesure 1 soit réglée en dessous de 50 mVc-c et la zone de mesure 2, en dessous de 180 mVc-c.			

Remarque;
△;(B − Y)=0
□;(R − Y)=0

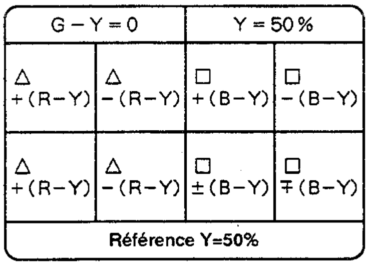

G − Y = 0
Y = 50%
△ +(R−Y)
△ −(R−Y)
□ +(B−Y)
□ −(B−Y)
△ +(R−Y)
△ −(R−Y)
□ ±(B−Y)
□ ∓(B−Y)
Référence Y=50%

Fig. 7−4 Motif DEM

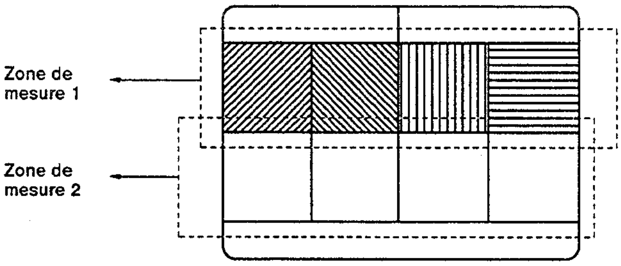
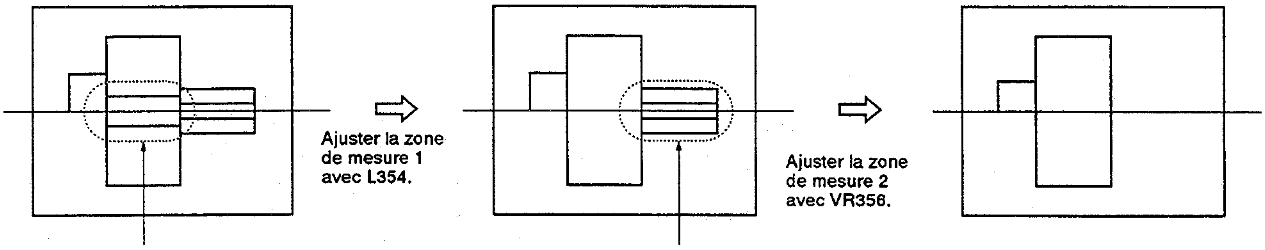

Zone de mesure 1
Zone de mesure 2

Fig. 7−5 Zone de misure


Ajuster la zone de mesure 1 avec L354.
Ajuster la zone de mesure 2 avec VR356.

Forme d'onde de la zone de mesure 1

a.

Forme d'onde de la zone de mesure 2

b.

Après le réglage

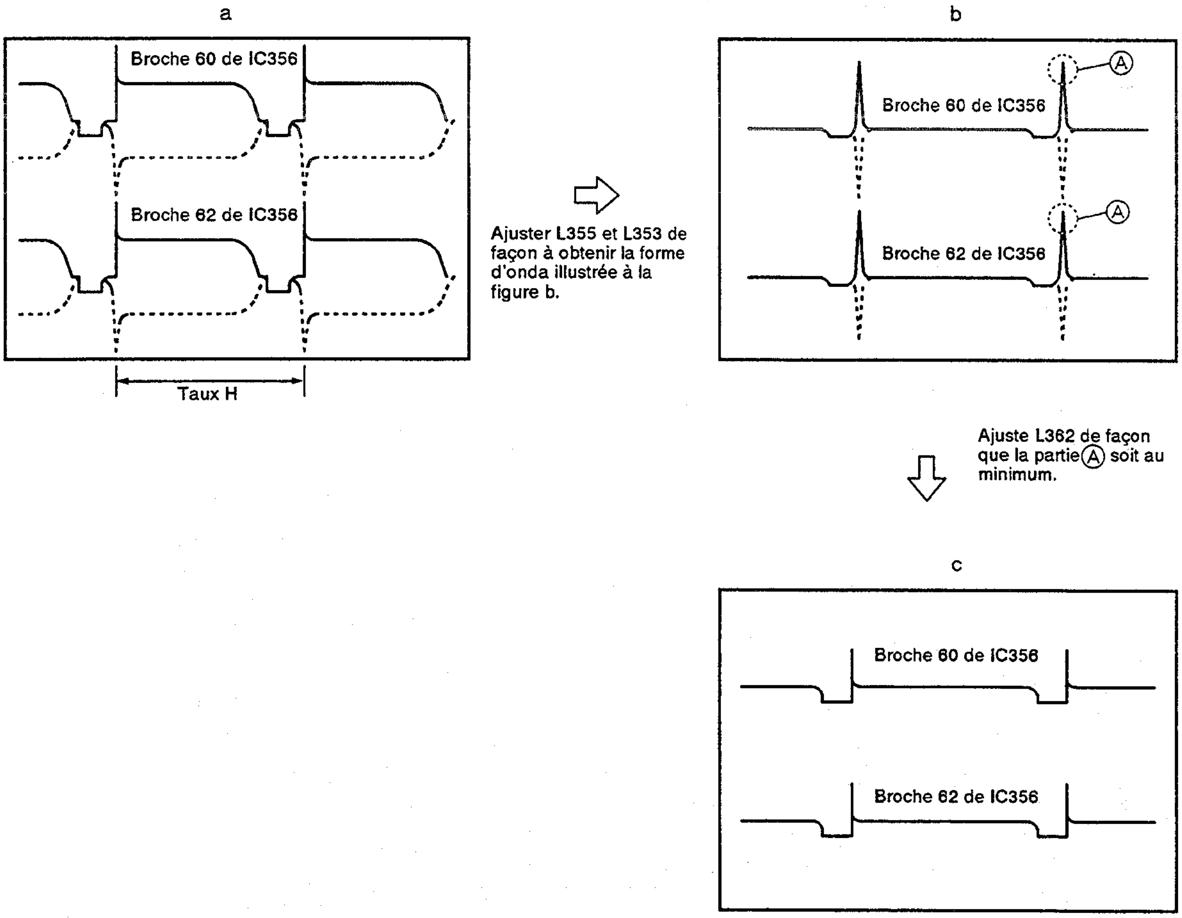
c.

Fig. 7−6 Ecran de l'oscilloscope

7.6.3 Ajustement du système SECAM

- Cet ajustement est indépendant car il ne s'applique qu'au système SECAM.

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
6-1	Réglage d'identité SECAM	Barre de couleur SECAM	L357 (V)	Ajuster de façon que la tension CC à la broche 23 de IC356 soit maximale.
6-2	Réglage de la bobine de détection et du filtre de sonnerie	Signal du noir (porteuse couleur SECAM inclue)	L355 (V): Broche 60(R-Y IN) L353 (V): Broche 62(B-Y IN)	Ajuster de façon que la forme d'onde apparaisse comme illustré à la Fig. 7-7 b, à la broche 60(R-Y IN) et à la broche 62(B-Y IN) de IC356.
6-3			L362 (V)	Ajuster de façon que la forme d'onde apparaisse comme illustré à la Fig. 7-7 c, à la broche 60 (R-Y IN) et à la broche 62 (B-Y IN) de IC356.
6-4	Répéter les étapes 6-2 et 6-3 jusqu'à obtention d'une image optimale. Vérifier que les barres de couleur soient affichées correctement sur l' écran après le réglage.			


a
Broche 60 de IC356
Broche 62 de IC356
Taux H
b
Broche 60 de IC356
Broche 62 de IC356
Ⓐ
Ⓐ
c
Broche 60 de IC356
Broche 62 de IC356

Ajuster L355 et L353 de façon à obtenir la forme d'onda illustrée à la figure b.

Ajuste L362 de façon que la partieⒶ soit au minimum.

Fig. 7-7 Réglage de la bobine de détection SECAM

7.7 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REMPLACE

- Avant le réglage, vérifier l'ajustement du filtre en peigne à la section 7.4 (système NTSC uniquement).
- Procéder au réglage V. SIZE, au réglage de largeur (1) V. BLK, au réglage de largeur H. BLK, au réglage de largeur (2) V. BLK, à la balance du blanc, au réglage standard PIONEER et au réglage de traînage du bleu comme décrit à la section 7.6.

7.8 QUAND L'ASSEMBLAGE TUNER-NICAM EST REPARE

- Les points de test de réglage(TP) se situent sur l'assemblage TUNER-NICAM sauf si spécifié autrement.

7.8.1 Réglage de la section tuner

- Les articles à ajuster ici dépendant du système de télévision local. Les système pour lesquels les réglages sont requis sont présentés dans le tableau ci-dessous.
- Pour le signal d'entrée indispensable, voir le Tableau 7-1. S'il n'est pas mentionné dans le tableau, envoyer les signaux à la borne d'entrée de l'antenne. Observer la Fig. 7-9 lors de la connexion.
- Lorsqu'un autre système de télévision est reçu après avoir effectué les ajustements pour un système de télévision spécifique, les conditions de réception vont se déteriorer. Dans ce cas, réajuster sur le système de télévision courant ou sur un des meilleurs systèmes spécifiés dans le Tableau 7-1.
- Le réglage de trappe de l'étape 3 est décrit séparément dans un autre tableau. Voir à la section 7.8.2.
- La procédure destinée à entrer en mode de test (mode AFT OFF) est fournie plus tard.

Tableau 7-1

•Les valeurs données pour "fp" dans le tableau sont des valeurs de référence. Les régler sur la fréquence et la chaîne les plus proches de celles disponobles dans la région d'utilisation.

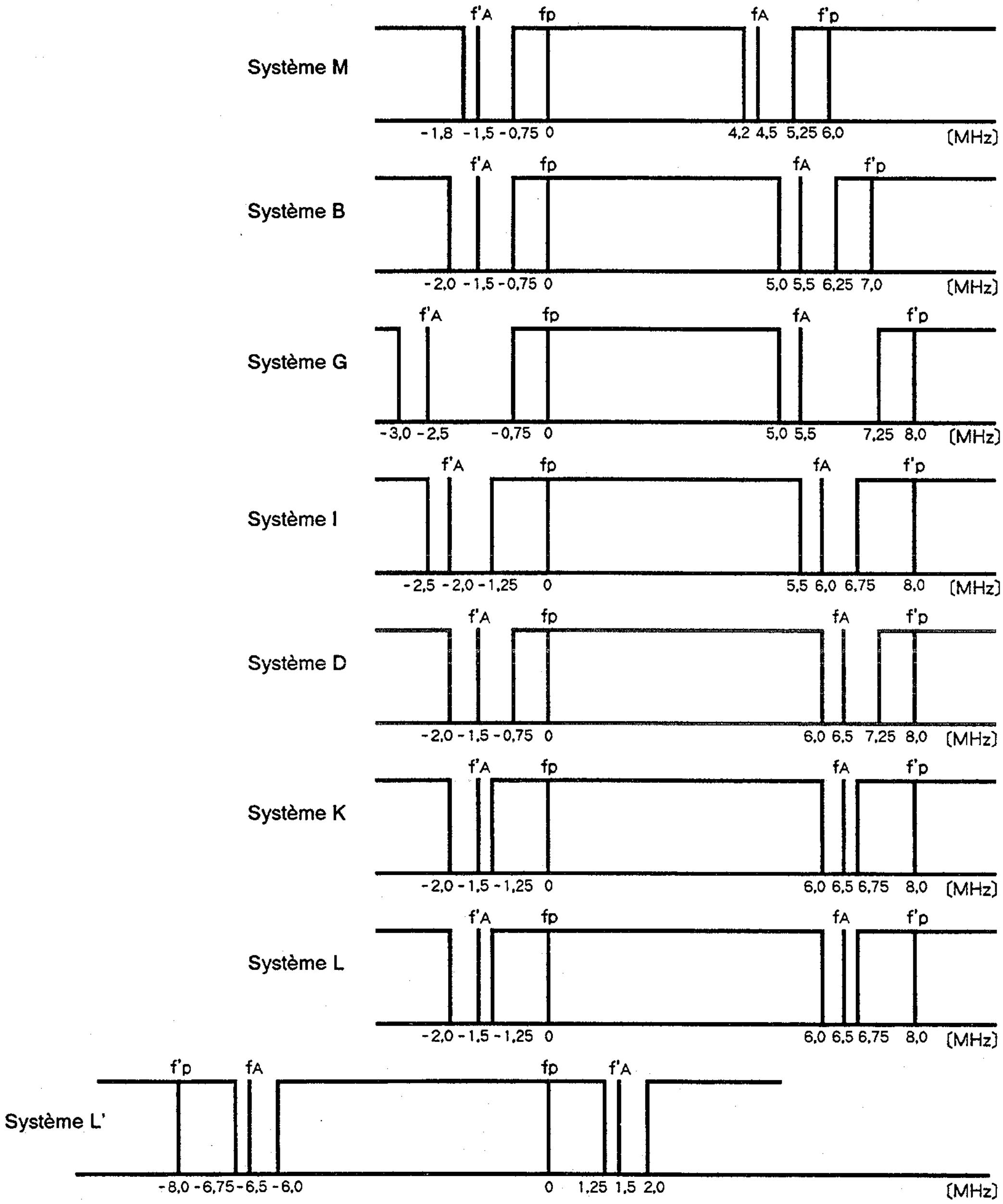
N° du signal	Contenu du signal	Niveau d'entrée d'antenne *2	Réglage du système SG *1
①	Signal non modulé de 33,4MHz	90 dB μV	L'
②	Signal non modulé de 39,9MHz	90 dB μV	
③	fp=119,25MHz, barre de couleur Audio ; 1kHz, 100% modulation. monaural	80 dB μV	M, B, G, I, D, K, L ou L'au choix (B et G sont les meilleurs.)
④	fp=196,25MHz, multi salve Audio ; 1kHz, 100% modulation. monaural	58 dB μV	M, B, G, I, D ou K au choix (B et G sont les meilleurs.)
⑤	fp=175,25MHz, 100% blanc Audio ; 1kHz, 100% modulation. stereo	80 dB μV	
⑥	fp=487,25MHz, barre de couleur Audio ; 400Hz, 100% modulation. monaural	80dB μV	L
⑦	fp=55,25MHz, barre de couleur Audio ; 1kHz, 100% modulation. ± 25kHz déviation, monaural	80 dB μV	M (US)
⑧	fp=67,25MHz, hachure en croix Audio ; 300Hz, 30% modulation. stéréo (canal gauche uniquement)	80 dB μV	
⑨	fp=175,25MHz, 10 intervalles Audio ; 5kHz, 30% modulation. stéréo (canal gauche uniquement)	80 dB μV	

*1: Réguler le système SG sur le système de télévision local.

*2:Régler le niveau audio SG sur une valeur inférieure à celle du niveau d'entrée de l'antenne, en utilisant les valeurs suivantes.
•Système M : 6dB , •Système B : 10dB , •Système G : 10dB , •Système I : 7dB , •Système D : 7dB ,
•Système K : 7dB , •Système L : 10dB , •Système L' : 10dB

N° d'étape	Article de réglage	Système pour lequel le réglage est requis	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage OSC L'	L'	Signal① entré à TP-IF IN (P-12)	L16 (T)	Ajuster la fréquence de TP-TRAP IN(P-23) sur 38,9MHz ± 20kHz(utiliser l'analyseur de spectre).
2	Circuit d'équilibrage du circuit d'inverseur		Signal② entré à TP-IF IN (P-12)	VR11 (T)	Minimiser l'élément 39,9MHz de TP-TRAP IN(P-23) (utiliser l'analyseur de spectre).
3	Réglage de trappe	Ce réglage dépend du système de télévision loocal. Voir section 7.8.2.			
4	Réglage LLD vidéo	M, B/G, I, D/K, L, L'	Signal ③	L22 (T)	Vérifier que le signal de couleur est fourni à TP-VIDEO (P-17). Dans la négative, ajuster L22 pour fournir la barre de couleur. Minimiser l'élément du signal couleur de TP-VIDEO (P-17).
5	Réglage AGC *1	M, B/G, I, D/K, L, L'	Signal ④	VR17 (T)	Ajuster la tension CC de TP-AGC(P-14) sur 6,5V ± 0,3V.
6	Réglage du niveau vidéo *1		Signal ⑤	VR13 (T)	Ajuster le niveau de sortie du signal vidéo à TP-VIDEO(P-17) sur 2,2Vc-c ± 0,1V.
7	Réglage du niveau SECAM	L, L'	Signal ⑥	VR14 (T)	Ajuster le niveau de détection vidéo à TP-VIDEO(P-17) sur 2,2Vc-c ± 0,1V.
8	Réglage VCO	M, B/G, I, D/K	Signal ⑤	L30 (T)	Vérifier que le signal vidéo (100 % blanc) est fourni à TP-LOCK (P-20). Dans la négative, ajuster le signal vidéo.
9				——	Mesurer la tension CC à TP-APC (P-16) quand TP-IF AGC (P-15) et TP-GND (P-11) sont court-circuitées.
10				L30 (T)	Libérer TP-IF AGC (P-15) et TP-GND (P-11), puis ajuster la tension CC de TP-APC (P-16) sur ± 100 mV, en fonction de la valeur obtenue à l'étape 9.
11	Réglage de distorsion audio US	Système M (US uniquement)	Signal ⑦	L32 (T)	Ajuster pour minimiser la distorsion de la sortie de l'onde sinusoïdale de 1 kHz à TP-A/P (P-21: borne de sortie du canal gauche).
12	Réglage de séparation stéréo US		Signal ⑧	RV03(IC)	Minimiser la sortie de TP-A/L (P-21: borne de sortie du canal gauche).
			Signal ⑨	RV06(IC)	Minimiser la sortie de TP-A/L (P-21: borne de sortie du canal gauche).

*1: Lors de l'ajustement AGC et du niveau vidéo dans le système L ou L', utiliser SG de M, B, G, I, D, ou K (SG de B et G sont les meilleurs). Si ces articles ne sont pas ajustés correctement, une saturation du blanc, du bruit ou des battements risquent de se manifester sur l'image ou l'image risque de s'assombrir.


Système M
f'A
fp
fA
f'p
-1,8 -1,5 -0,75 0
4,2 4,5 5,25 6,0
(MHz)
Système B
f'A
fp
fA
f'p
-2,0 -1,5 -0,75 0
5,0 5,5 6,25 7,0
(MHz)
Système G
f'A
fp
fA
f'p
-3,0 -2,5
-0,75 0
5,0 5,5
7,25 8,0
(MHz)
Système I
f'A
fp
fA
f'p
-2,5 -2,0 -1,25
0
5,5 6,0 6,75
8,0
(MHz)
Système D
f'A
fp
fA
f'p
-2,0 -1,5 -0,75 0
6,0 6,5 7,25 8,0
(MHz)
Système K
f'A
fp
fA
f'p
-2,0 -1,5 -1,25 0
6,0 6,5 6,75 8,0
(MHz)
Système L
f'A
fp
fA
f'p
-2,0 -1,5 -1,25 0
6,0 6,5 6,75 8,0
(MHz)
Système L'
f'p
fA
fp
f'A
-8,0 -6,75 -6,5 -6,0
0 1,25 1,5 2,0
(MHz)

Remarque: fp ;porteuse vidéo
fA ;porteuse audio
f'p ;porteuse vidéo adjacente supérieure
f'A ;porteuse audio adjacente inférieure
IF ;38,9(MHz)

Fig. 7 – 8 Relation entre les fréquences porteuses vidéo et audio des système de télévision

7.8.2 Réglage de trappe

- Ce réglage est décrit séparément car la procédure de réglage de la section tuner dépendant du système de télévision utilisé.
- En ce qui concerne le signal à entrer, se reporter au Tableau 7-2. Connecter le signal à la borne d'entrée de l'antenne.
- Ajuster F13 et F19 de manière alternative pour obtenir le réglage optimal.

Tableau 7-2 Signaux d'entrée

• Utiliser le canal réservé au signal ①.

N° de signal	Vidéo	Audio	Niveau d'entrée d'antenne	Canal
Signal ①	Barre de couleur	1kHz, 100% modulation	80dBμV	Canal libre
Signal ②				Canal suivant supérieur au signal ①.
Signal ③				Canal suivant inférieur au signal ①.

Remarque:Régler le niveau audio SG sur une valeur inférieure à celle du niveau d'entrée de l'antenne, en utilisant les valeurs suivantes.
•Système M : 6dB , •Système B : 10dB , •Système G : 10dB , •Système I : 7dB , •Système D : 7dB ,
•Système K : 7dB , •Système L : 10dB , •Système L' : 10dB

● Pour le Système M

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
3-1	Réglage de trappe vidéo adjacent	Signal ②	F12 (T)	Ajuster l'élément 32,9 MHz de TP-SAW IN (P-19) sur le minimum.
3-2	Réglage de trappe audio	Signal ①	F13, F19 (T)	Ajuster l'élément 34,4 MHz de TP-SAW IN (P-19) sur le minimum.
3-3	Réglage de trappe audio adjacent	Signal ③	F18 (T)	Ajuster l'élément 40,4 MHz de TP-SAW IN (P-19) sur le minimum.

● Pour le système B

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
3-1	Réglage de trappe vidéo adjacent	Signal ②	F12 (T)	Ajuster l'élément 31,9 MHz de TP-SAW IN (P-19) sur le minimum.
3-2	Réglage de trappe audio	Signal ①	F13, F19 (T)	Ajuster l'élément 33,4 MHz de TP-SAW IN (P-19) sur le minimum.
3-3	Réglage de trappe audio adjacent	Signal ③	F18 (T)	Ajuster l'élément 40,4 MHz de TP-SAW IN (P-19) sur le minimum.

● Pour le système G

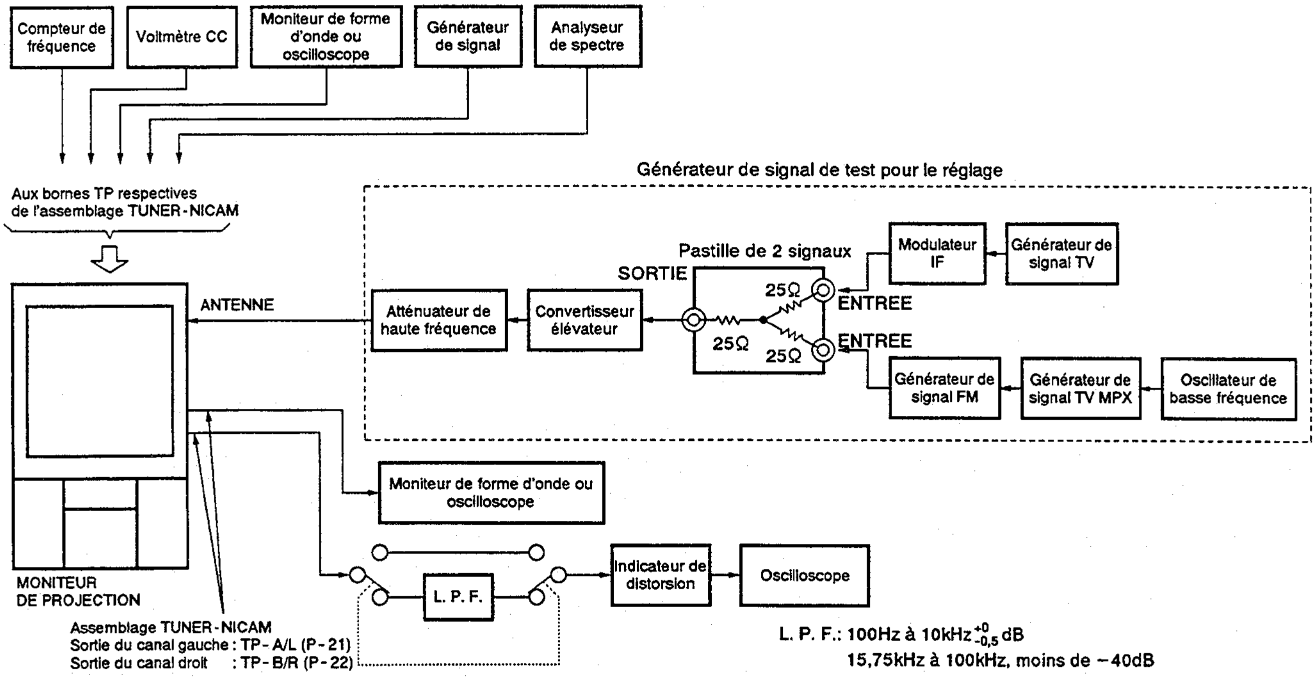
N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
3-1	Réglage F12	——	F12 (T)	Ajuster seulement quand l'image n'apparaît pas correctement.
3-2	Réglage de trappe audio	Signal ①	F13, F19 (T)	Ajuster l'élément 33,4 MHz de TP-SAW IN (P-19) sur le minimum.
3-3	Réglage F18	——	F18 (T)	Ajuster seulement quand l'image n'apparaît pas correctement.

• Pour le système I

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
3-1	Réglage de trappe audio	Signal ①	F12 (T)	Ajuster l'élément 32,9 MHz de TP-SAW IN (P-19) sur le minimum.
3-2	Réglage F13 et F19	——	F13, F19 (T)	Ajuster seulement quand l'image n'apparaît pas correctement
3-3	Réglage F18	——	F18 (T)	

• Pour le système D, K, L et L'

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
3-1	Réglage de trappe audio	Signal ①	F12 (T)	Ajuster l'élément 32,4 MHz de TP-SAW IN (P-19) sur le minimum.
3-2	Réglage F13 et F19	——	F13, F19 (T)	Ajuster seulement quand l'image n'apparaît pas correctement
3-3	Réglage de trappe audio adjacent	Signal ③	F18 (T)	Ajuster l'élément 40,4 MHz de TP-SAW IN (P-19) sur le minimum.


Compteur de fréquence
Voltmètre CC
Moniteur de forme d'onde ou oscilloscope
Générateur de signal
Analyseur de spectre
Aux bornes TP respectives de l'assemblage TUNER-NICAM
Générateur de signal de test pour le réglage
Pastille de 2 signaux
SORTIE
25Ω
25Ω
25Ω
ENTREE
ENTREE
Modulateur IF
Générateur de signal TV
ANTENNE
Atténuateur de haute fréquence
Convertisseur élévateur
Générateur de signal FM
Générateur de signal TV MPX
Oscillateur de basse fréquence
Moniteur de forme d'onde ou oscilloscope
L. P. F.
Indicateur de distorsion
Oscilloscope
MONITEUR DE PROJECTION
Assemblage TUNER-NICAM
Sortie du canal gauche : TP-A/L (P-21)
Sortie du canal droit : TP-B/R (P-22)

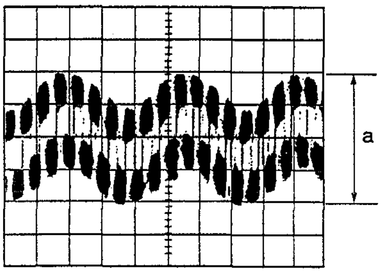
L. P. F.: 100Hz à 10kHz $^{+0}_{-0,5}$ dB
15,75kHz à 100kHz, moins de −40dB

Fig. 7-9 Schéma de connexion lors du réglage de la section tuner

7.8.3 Réglage de la section NICAM

- Ce réglage est requis uniquement dans la zone multiplex audio B/G CCIR.
- Procéder à ce réglage après le réglage de la section TUNER à la section 7.8.1 et le réglage de trappe à la section 7.8.2.

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage stéréo FM CCIR	Signal libre du signal multiplex audio B/G CCIR (STEREO ou DUAL)	F201 (T)	Brancher un oscilloscope à la broche 8 de IC202 et observer la forme de l'onde (Fig. 7-10). Régler l'amplitude (Fig. 7-10 a) au maximum.



H : 5 µsec/div. , V : 100 mV/div.

Fig. 7-10 Forme d'onde de la broche 8 de IC202

Ajust er " a " au maximum.

Remarque: Si ce rélage est mal réalisé, une onde d'amplitude plus petite et plus plate que celle illustré á la Fig. 7-10 sera affichée.

7.9 QUAND L'ASSEMBLAGE TUNER-NICAM EST REMPLACE

- Aucun réglage n'est requis.

7.10 QUAND L'ASSEMBLAGE AM-DEMOD EST REPARE

- Ce réglage est requis pour les Système L or L'.
- Les points de test de réglage(TP) se situent sur l'assemblage AM-DEMOD.

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage de détection AM	Envoyer une chaîne du système L ou L' à la borne d'entrée de l'antenne. Le signal audio doit être 1kHz, 50 % de modulation, AM alors qu'il n'y a pas d'exigence pour le signal vidéo.	L1018 (A)	Ajuster de façon qu'une sinusoïde de 1 kHz sorte de la broche 5 de IC1012 avec une distorsion minimum et un niveau maximum.
2	Réglage du niveau audio		VR1012 (A)	Ajuster de façon que le niveau de la sinusoïde de 1 kHz sortie de la broche 5 de IC1016 soit de 200 mV efficaces ± 50 mV.

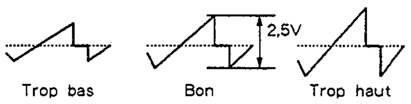
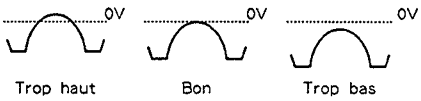
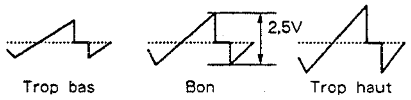
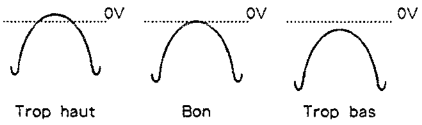
7.11 QUAND L'ASSEMBLAGE AM-DEMOD EST REMPLACE

- Aucun réglage n'est requis.

7.12 QUAND L'ASSEMBLAGE DE CONVERGENCE EST REPARE OU REMPLACE

7.12.1 REGLAGE DU NIVEAU SUPERIEUR DE L'ONDE PARABOLIQUE

- Les points de test de réglage(TP) se situent sur l'assemblage COVERGENCE.
- Procéder à ce réglage uniquement quand la convergence a bougé.

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	NIVEAU DE L'ONDE EN DENTS DE SCIE H	VR701 (C)	A TP-H.NOKO (P-805), régler le niveau de la forme d'onde de sortie sur 2,5 Vc-c. 
2	NIVEAU SUPERIEUR DE LA FORME DE L'ONDE PARABOLIQUE H	VR750 (C)	A TP-H.PARA (P-802), régler le niveau supérieur de la forme d'onde de sortie sur 0 V ± 20 mV. 
3	NIVEAU DE L'ONDE EN DENTS DE SCIE V	VR702 (C)	A TP-V.NOKO (P-803), régler le niveau de la forme d'onde de sortie sur 2,5 Vc-c. 
4	NIVEAU SUPERIEUR DE LA FORME DE L'ONDE PARABOLIQUE V	VR749(C)	A TP-V.PARA (P-801), régler le niveau supérieur de la forme d'onde de sortie sur 0 V ± 20 mV. 

7.12.2 REGLAGE DE CONVERGENCE

- Les mouvement de l'image et les points de réglage sont résumés aux Fig. 7-14 et 7-15.
- Le signal d'entrée est le signal de hachure en croix du système PAL.
- Effectuer le réglage de position par les touches de la télécommande, comme expliqué.
  (se reporter à la Fig. 7-11.)
- Tous les réglages terminés, libérer le court-circuit pour obtenir un écran blanc et procéder au préréglage.
- Corriger la ligne verticale avec le signal de correction horizontale et corriger la ligne horizontale avec le signal de correction verticale.
- Les points de réglage se situent sur l'assemblage CONVERGENCE.

※ 1: Ecran de réglage de convergence et fonctionnement

Ⓐ : Chaque fois que l'interrupteur de la section de réglage avant est enfoncé, l'affichage change les écrans ② à ⑨.

Ⓑ : Pour passer de ADJ ↓ ↑ à ADJ ←→ : appuyer sur la touche numérique 4 ou 6 de la télécommande.

Ⓑ' : Pour passer de ADJ ←→ à ADJ ↓ ↑ : appuyer sur la touche numérique 2 ou 8 de la télécommande.

Ⓒ : Avec l'écran ADJ ↓ ↑ l'affichage passe de l'écran ③, ⑤, ⑦ à ⑨ quand la touche numérique 5 de la télécommande est enfoncée.

Ⓒ' : Avec l'écran ADJ ←→ l'affichage passe de l'écran ②, ④, ⑥ à ⑧ quand la touche numérique 5 de la télécommande est enfoncée.

Réglage horizontal du rouge	: Avec l'écran ② ou ⑥, appuyer sur la touche 2 (supérieure) ou 8 (inférieure) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.
Réglage vertical du rouge	: Avec l'écran ③ ou ⑦, appuyer sur la touche 4 (gauche) ou 6 (droite) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.
Réglage horizontal du bleu	: Avec l'écran ④ ou ⑧, appuyer sur la touche 2 (supérieure) ou 8 (inférieure) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.
Réglage vertical du bleu	: Avec l'écran ⑤ ou ⑨, appuyer sur la touche 4 (gauche) ou 6 (droite) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.

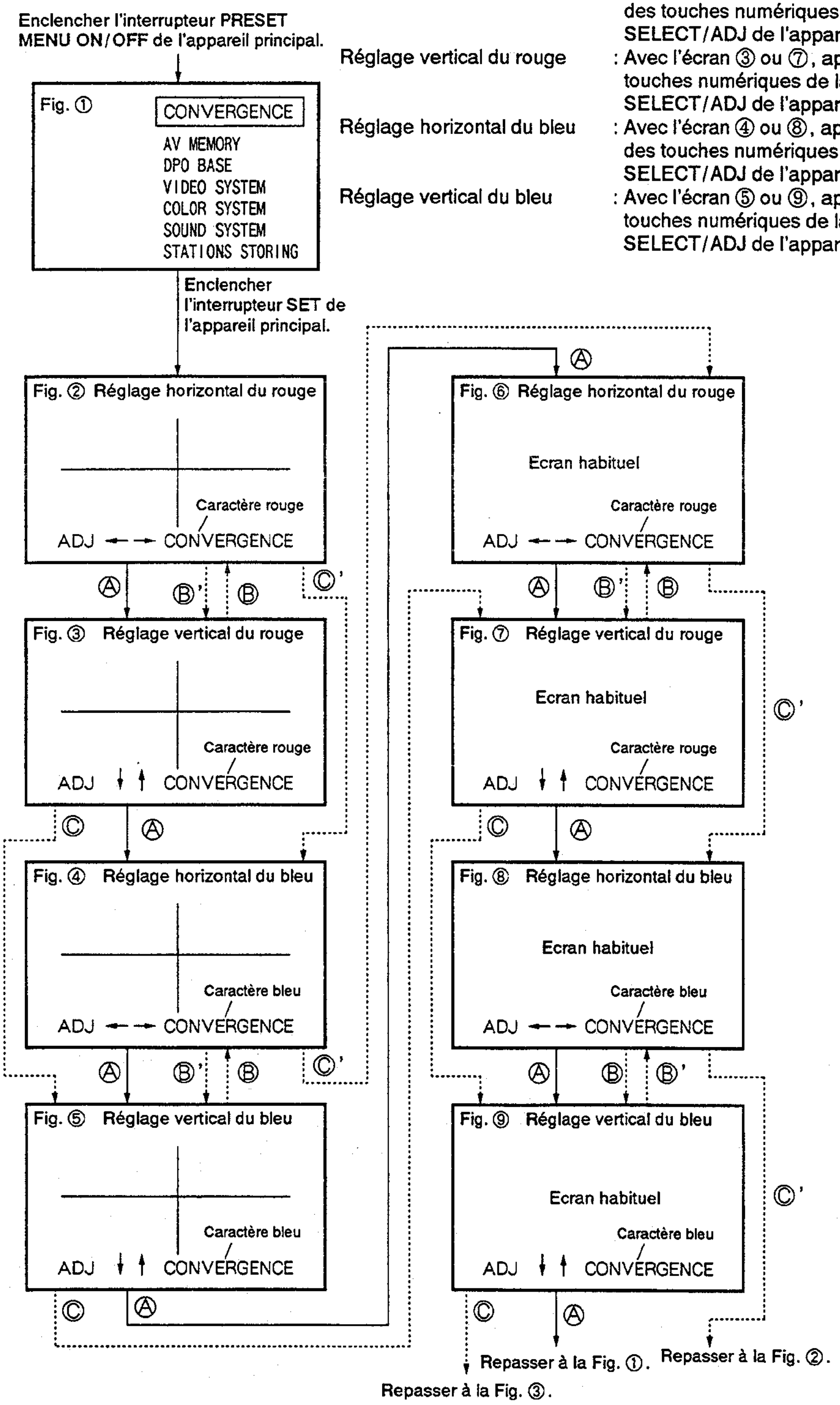

Enclencher l'interrupteur PRESET MENU ON/OFF de l'appareil principal.
Fig. ①
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
Enclencher l'interrupteur SET de l'appareil principal.
Fig. ② Réglage horizontal du rouge
Caractère rouge
ADJ ←→ CONVERGENCE
Fig. ③ Réglage vertical du rouge
Caractère rouge
ADJ ↓↑ CONVERGENCE
Fig. ④ Réglage horizontal du bleu
Caractère bleu
ADJ ←→ CONVERGENCE
Fig. ⑤ Réglage vertical du bleu
Caractère bleu
ADJ ↓↑ CONVERGENCE
Fig. ⑥ Réglage horizontal du rouge
Ecran habituel
Caractère rouge
ADJ ←→ CONVERGENCE
Fig. ⑦ Réglage vertical du rouge
Ecran habituel
Caractère rouge
ADJ ↓↑ CONVERGENCE
Fig. ⑧ Réglage horizontal du bleu
Ecran habituel
Caractère bleu
ADJ ←→ CONVERGENCE
Fig. ⑨ Réglage vertical du bleu
Ecran habituel
Caractère bleu
ADJ ↓↑ CONVERGENCE
Ⓐ
Ⓑ
Ⓑ'
Ⓒ
Ⓒ'
Repasser à la Fig. ①.
Repasser à la Fig. ②.
Repasser à la Fig. ③.

Fig. 7-11 Fonctionnement des touches sur l'écran de convergence

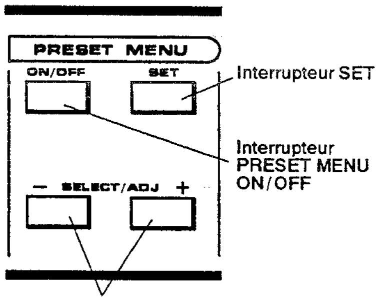

PRESET MENU
ON/OFF
SET
Interrupteur SET
Interrupteur PRESET MENU ON/OFF
— SELECT/ADJ +
Interrupteur SELECT ADJ

Fig. 7-12
Disposition des touches sur l'appareil principal

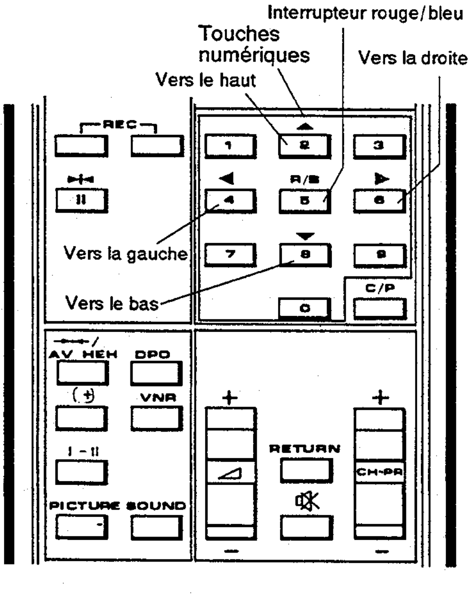

Interrupteur rouge/bleu
Touches numériques
Vers la droite
Vers le haut
REC
1
2
3
4
5
6
7
8
9
0
R/B
C/P
Vers la gauche
Vers le bas
AV HEH
DPO
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
−

Fig.7-13
Disposition des touches sur la télécommande

(1) AJUSTEMENT DE LIGNE VERTE

- Comme les lignes vertes sont utilisées en tant que référence lors du réglage du rouge et du bleu, veiller à ce qu'elles soient ajustées de manière précise.
- Court-circuiter TP-R (TP-375), TP-B (TP-374) et TP-GND (TP-377) de l'assemblage VIDEO-AUDIO. Ensuite, les lignes vertes apparaissent sur l'écran. Le réglage de ligne verte terminé, enlever le court-circuit.

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	GH-PIN	VR705 (C)	Ajuster la ligne verte sur une ligne droite (se reporter aux Fig. 7-14 et 7-15).
2	GH-KEY	VR704 (C)	
3	GV-SKEW	VR706 (C)	
4	GV-BOW	VR707 (C)	
5	GV-KEY	VR708 (C)	
6	GV-S-KEY	VR709 (C)	
7	GV-PIN	VR710 (C)	
8	Répéter les étapes 1 à 7 jusqu'à obtention de la meilleure image possible.		

(2) AJUSTEMENT DE LIGNE ROUGE

- Court-circuiter TP-B (TP-374) et TP-GND (TP-377) de l'assemblage VIDEO-AUDIO. Ensuite, les lignes vertes et les lignes rouges apparaissent sur l'écran. Le réglage de ligne rouge terminé, enlever le court-circuit.
- Ajuster chaque VR de façon que les lignes rouges convergent avec les lignes vertes pour obtenir des lignes jaunes
- Après l'ajustement, proccéder au réglage fin en observant la totalité de l'écran.

• Réglage de compensation de distorsion horizontale du rouge

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	RH-SKEW	VR711 (C)	Ajuster les lignes verticales rouges, au centre de l' écran, sur des lignes droites sans distorsion et non inclinées (se reporter à la Fig. 7-14).
2	RH-BOW	VR712 (C)	
3	Répéter les étapes 1 et 2.		
4	RH-KEY	VR713 (C)	Ajuster les lignes verticales rouges, à droite et à gauche de l'écran sur des lignes droites, non inclineés (se reporter à la Fig. 7-14).
5	RH-S-KEY	VR714 (C)	
6	Répéter les étapes 4 et 5.		
7	RH-PIN	VR715 (C)	Ajuster les lignes verticales rouges, à droite et à gauche de l'écran sur des lignes droites, sans distorsion (se reporter à la Fig. 7-14).
8	RH-S-PIN	VR716 (C)	
9	Répéter les étapes 7 et 8 ou les étapes 1 à 8.		

• Réglage de compensation d'intervalle horizontale du rouge

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	RH-POSITION	Touche 4 et 6 de la télécommande	Ajuster de façon que les lignes verticales rouges convergent vers les lignes verticales vertes, au centre de l'écran, pour obtenir des lignes jaunes. Ceci sert de réglage de référence, mais si les lignes divergent pendant le réglage, procéder à ce réglage après avoir évalué la divergence.
2	RH-LIN	VR717 (C)	Ajuster de façon que les lignes verticales rouges convergent avec les lignes verticales vertes, à droite et à gauche de l'écran, pour obtenir des lignes jaunes (se reporter à la Fig. 7-14).
3	RH-4-LIN	VR720 (C)	
4	RH-S-LIN	VR718 (C)	
5	RH-SIZE	VR719 (C)	
6	Répéter les étapes 1 et 5.		

• Réglage de compensation de distorsion verticale du rouge

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	RV-SKEW	VR721 (C)	Ajuster les lignes horizontales rouges, au centre de l'céran, sur des lignes droites sans distorsion et non inclinées (se reporter à la Fig. 7-15).
2	RV-BOW	VR722 (C)	
3	Répéter les étapes 1 et 2.		
4	RV-KEY	VR723 (C)	Ajuster les lignes horizontales rouges du bas et du haut de l'écran sur des lignes droites non inclinées (se reporter à la Fig. 7-15).
5	RV-S-	VR724 (C)	
6	RV-S-PIN	VR726 (C)	
7	RV-PIN	VR725 (C)	
8	Répéter les étapes 4 et 7 ou les étapes 1 à 7.		

• Réglage de compensation d'intervalle verticale du rouge

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	RV-LIN	VR727 (C)	Ajuster de façon que les lignes horizontales rouges convergent vers les lignes horizontales vertes, au centre de l'écran, pour obtenir des lignes jaunes. Ceci sert de réglage de référence, mais si les lignes divergent pendant le réglage, procéder à ce réglage aprés avoir évalué la divergence (se reporter à la Fig. 7-15).
2	RV-S-LIN	VR729 (C)	
3	RV-POSITION	Touches 2 et 8 de la télécommande	
4	RV-SIZE	VR728 (C)	Ajuster de façon que les lignes horizontales rouges convergent avec les lignes horizontales vertes, du bas et du haut de l'écran, pour obtenir des lignes jaunes (se reporter à la Fig. 7-15).
5	Répéter les étapes 1 à 4.		

(3) AJUSTEMENT DE LIGNE BLEU

- Court-circuiter TP-R(TP-375) et TP-GND(TP-377) de l'assemblage VIDEO-AUDIO. Ensuite, les lignes vertes et les lignes bleues apparaissent sur l'écran. Le réglage de ligne bleue terminé enlever le court-circuit.
- Ajuster chaque VR de façon que les lignes bleues convergent avec les lignes vertes pour obtenir des lignes cyan.
- Après l'ajustement, procéder au réglage fin en observant la totalité de l'écran.

● Réglage de compensation de distorsion horizontale du bleu

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	BH-SKEW	VR730 (C)	Observer les lignes verticales bleues de l'écran et les ajuster de la même manière que pour le réglage de compensation de distorsion horizontale du rouge.
2	BH-BOW	VR731 (C)	
3	BH-KEY	VR732 (C)	
4	BH-S-KEY	VR733 (C)	
5	BH-PIN	VR734 (C)	
6	BH-S-PIN	VR735 (C)	

● Réglage de compensation d'intervalle horizontale du bleu

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	BH-POSITION	Touches 4 et 6 de la télécommande	Ajuster de façon que les lignes verticales bleues convergent vers les lignes verticales vertes pour obtenir des lignes cyan, de la même manière que pour le réglage de compensation d'intervalle horizontal du rouge.
2	BH-LIN	VR736 (C)	
3	BH-4-LIN	VR739 (C)	
4	BH-S-LIN	VR737 (C)	
5	BH-SIZE	VR738 (C)	

● Réglage de compensation de distorsion verticale du bleu

N° d'étape	Article de réglage	Point de réglage	Procédure de réglage
1	BV-SKEW	VR740 (C)	Observer les lignes horizontales bleues de l'écran et les ajuster de la même manière que pour le réglage de compensation de distorsion verticale du rouge.
2	BV-BOW	VR741 (C)	
3	BV-KEY	VR742 (C)	
4	BV-S-KEY	VR743 (C)	
5	BV-S-PIN	VR745 (C)	
6	BV-PIN	VR744 (C)	

● Réglage de compensation d'intervalle verticale du bleu

N° d'étape	Article de réglage	7Point de réglage	Procédure de réglage
1	BV-LIN	VR746 (C)	Ajuster de façon que les lignes horizontales bleues convergent vers les lignes horizontales vertes pour obtenir des lignes cyan, de la même manère que pour le réglage de compensation d'intervalle vertical du rouge.
2	BV-S-LIN	VR748 (C)	
3	BV-POSITION	Touches 2 et 8 de la télécommande	
4	BV-SIZE	VR747 (C)	

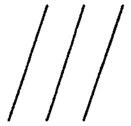
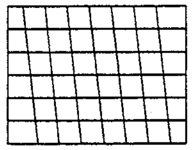
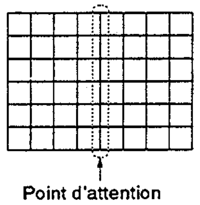
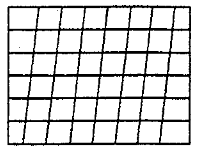
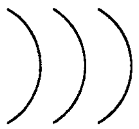
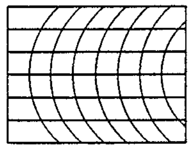
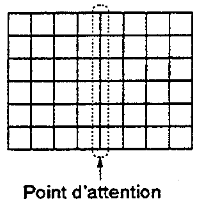
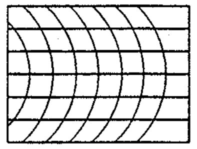
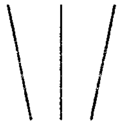
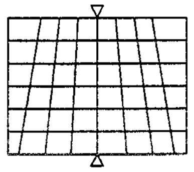
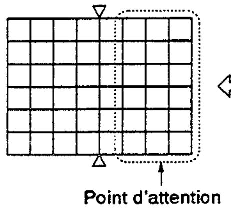
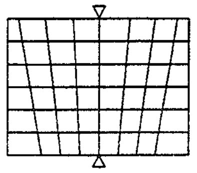
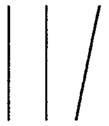
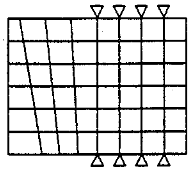
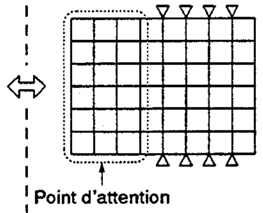
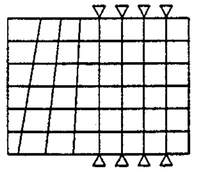
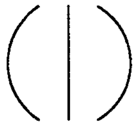
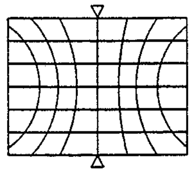
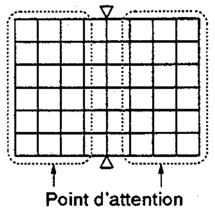
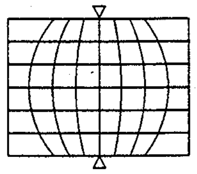
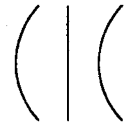
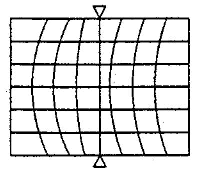
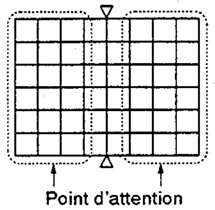
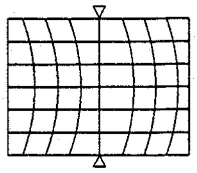
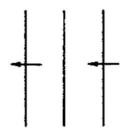
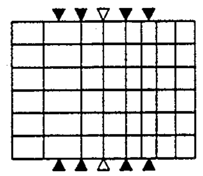
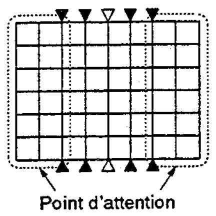
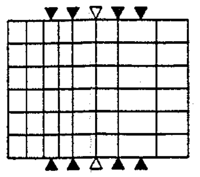
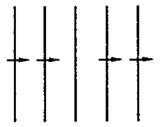
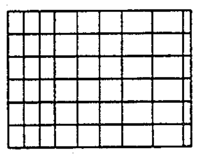
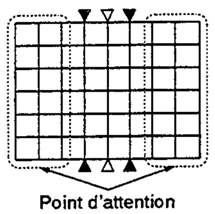
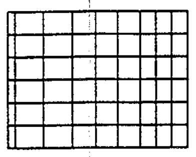
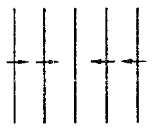
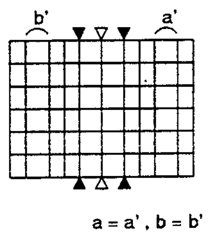
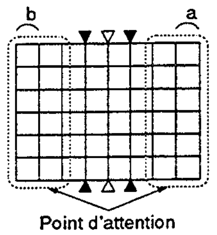
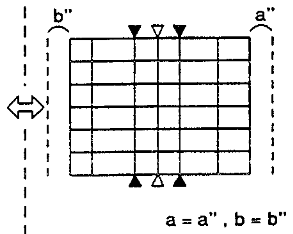
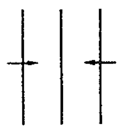
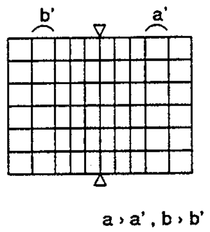
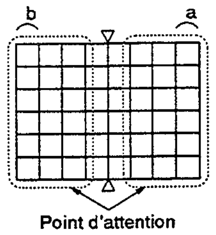
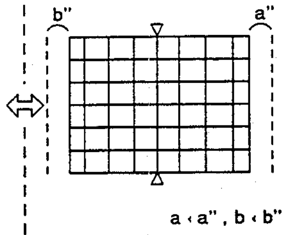
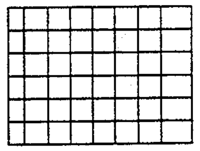
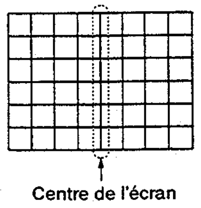
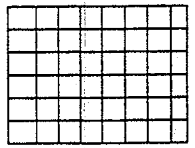
Compensation	Signal et repère *1	Ecran déformé	Ecran corrigé	Ecran déformé	Point de réglage	
Compensation de distorsion horizontale	H-SKEW 				Observer les lignes verticales au centre de l'écran(où il n'y a pas de mouvement H-KEY, H-S-KEY, H-PIN ni H-S-PIN), puis ajuster les lignes verticales pour éliminer l'inclinaison.	Pour obtenir les meilleures lignes possibles, ajuster les lignes verticales au centre de l'écran en suivant la procédure de réglage de H-SKEW et H-BOW.
	H-BOW 				Observer les lignes verticales au centre de l'écran, puis transformer les lignes courbées en lignes droites.	
	H-KEY 				Observer les lignes verticales sur la droite de l'écran(où il n'y a pas de mouvement H-S-KEY), puis ajuster les lignes verticales pour éliminer l'inclinaison.	Pour éliminer l'inclinaison, ajuster les lignes verticales sur la droite et la gauche de l'écran en suivant la procédure de réglage de H-KEY et H-S-KEY.
	H-S-KEY 				Observer les lignes verticales sur la gauche de l'écran, puis ajuster les lignes verticales pour éliminer l'inclinaison.	
	H-PIN 				Observer les lignes verticales sur la droite et la gauche de l'écran, puis ajuster les lignes courbes pour rendre la droite et la gauche symétriques par H-S-PIN. Ensuite, transformer les lignes verticales courbes de la droit et de la gauche de l'écran en lignes droites par H-PIN.	Pour éliminer la distorsion, redresser les lignes verticales de la droite et de la gauche de l'écran en suivant la procédure de réglage H-PIN et H-S-PIN.
	H-S-PIN 					

Fig. 7-14 Compensation horizontale

Compensation	Signal et repère *1	Ecran déformé	Ecran corrigé	Ecran déformé	Point de réglage	
Compensation d'intervalle horizontal	H-LIN 				Ajuster en suivant la procédure de réglage de H-LIN, H-4-LIN et H-S-LIN(se souvenir du degré du mouvement H-SIZE) de façon que l'intervalle entre les lignes verticales sur la droite soit identique à celui sur la gauche, par rapport à un point central fixe. Par exemple, quand les lgnes verticales de la droite de l'écran sont déplacées vers la droite, déplacer les lignes verticales de la gauche vers la gauche, au même degré que celui de la droite.	Les lignes verticales au centre de l'écran converge vers les lignes vertes avec H-POSITION. En outre, les lignes verticales sur la droite et la gauche de l'écran convergent vers les lignes vertes avec H-LIN, H-4-LIN, H-S-LIN et H-SIZE.
	H-4-LIN 					
	H-S-LIN 					
	H-SIZE 				Faire converger les lignes verticales de la droite et la gauche de l'écran vers les lignes vertes.	
	H-POSITION				Les lignes verticales de l'écran se déplacent parallélement à droite et gauche grâce au réglage de convergence de la télécommande ou de l'appareil principal. Quand les lignes verticales se déplacent à volonté prendre le degré du mouvement en considération.	

Remarque: KEY est l'abrréiation de KEYSTONE
et LIN, celle de LINEARITY.
▽: indique les points fixes
▼: indiquent les points qui bougent à peine
*1: Le dessin est imprimé sur laplaquette des circuits imprimés.

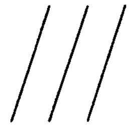
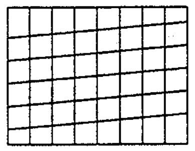
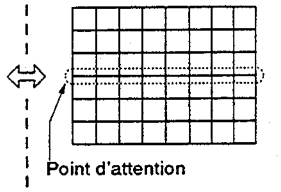
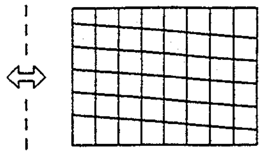
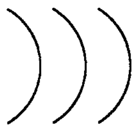
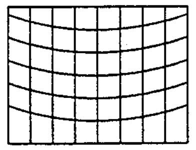
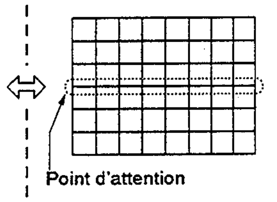
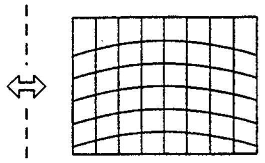
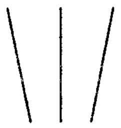
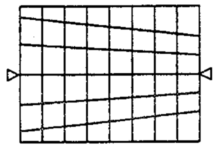
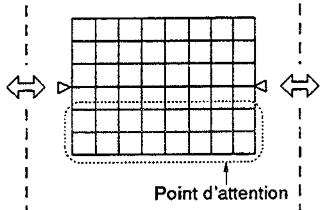
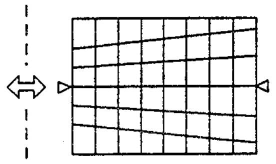
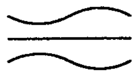
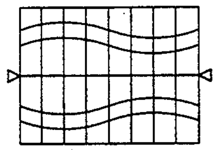
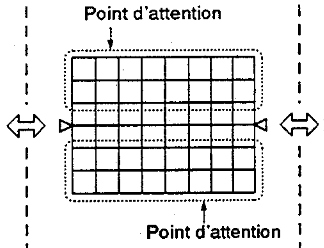
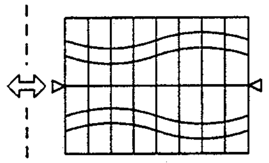
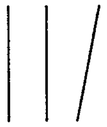
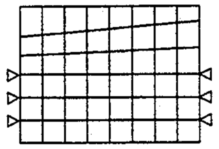
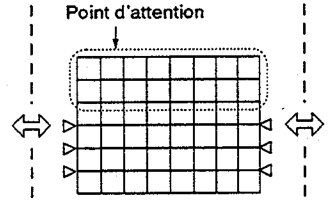
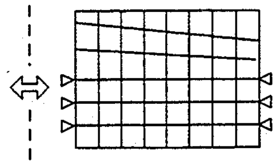
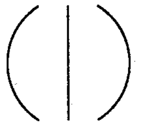
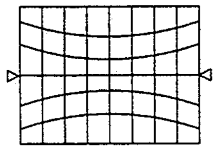
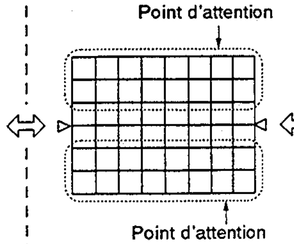
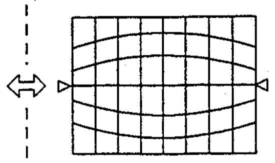
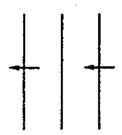
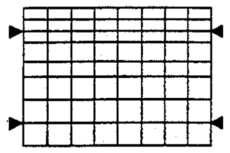
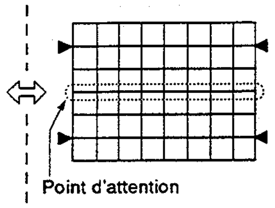
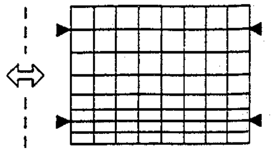
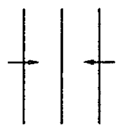
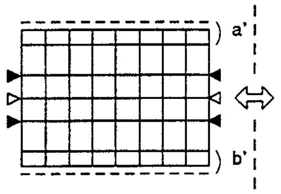
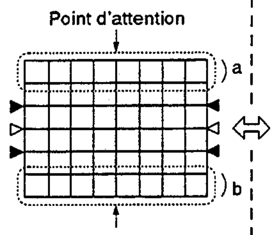
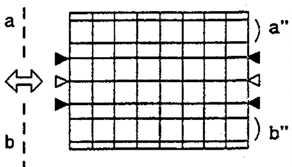
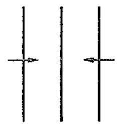
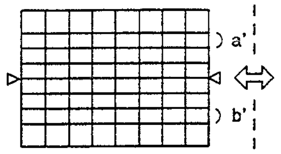
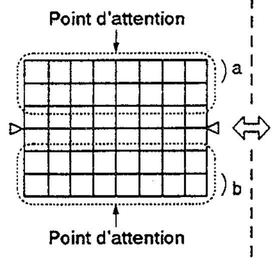
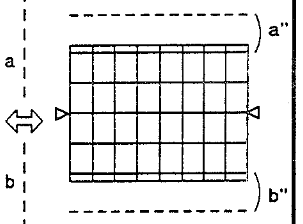
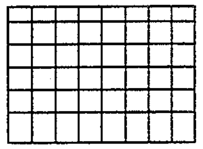
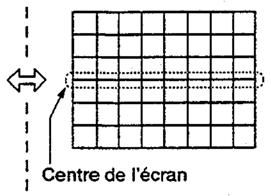
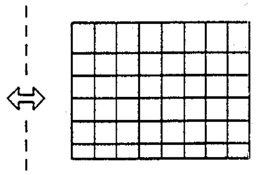
Compensation	Signal et repère *1	Ecran déformé	Ecran corrigé	Ecran déformé	Point de réglage	
Compensation de distorsion verticale	V-SKEW 				Observer les lignes horizontales au centre de l'écran(où il n'y a pas de mouvement V-KEY, V-S-KEY, ou V-PIN), puis ajuster les lignes horizontales pour éliminer l'inclinaison.	Pour obtenir les meilleures lignes possibles, ajuster les lignes horizontales au centre de l'écran en suivant la procédure de réglage de V-SKEW et V-BOW.
	V-BOW 				Observer les lignes horizontales au centre de l'écran, puis transformer les lignes courbées en lignes droites.	
	V-KEY 				Observer les lignes horizontales du bas de l'écran(où il n'y a pas de mouvement V-S-KEY), puis ajuster les lignes horizontales pour éliminer l'inclinaison.	Pour éliminer l'inclinaison, ajuster les lignes horizontales du bas et du haut de l'écran en suivant la procédure de réglage de V-KEY, V-S-PIN et V-S-KEY.
	V-S-PIN 				Observer les lignes horizontales du haut et du bas de l'écran, puis transformer les lignes courbes en lignes droites.	
	V-S-KEY 				Observer les lignes horizontales du haut de l'écran, puis ajuster les lignes horizontales pour éliminer l'inclinaison.	
	V-PIN 				Observer les lignes horizontales du haut et du bas de l'écran, puis transformer les lignes courbes en lignes droites.	Pour éliminer la distorsion, redresser les lignes horizontales du haut et du bas de l'écran en suivant la procédure de réglage V-PIN.

Fig. 7-15 Compensation vertic

Compensation	Signal et repère	Ecran déformé	Ecran corrigé	Ecran déformé	Point de réglage	
Compensation d'intervalle vertical	V-LIN 				Faire converger les lignes horizontales du centre de l'écran vers les lignes vertes. A cette étape, veiller à ce que l'intervalle de ligne horizontale du haut de l'écran soit identique à celui du bas de l'écran, par rapport à un point central fixe. Cependant, si le même intervalle n'est pas obtenu, ajuster de nouveau POSITION, V-LIN et V-S-LIN.	Les lignes horizontales du centre de l'écran convergent vers la ligne verte avec V-LIN, V-S-LIN et V-POSITION. En outre, les lignes horizontales du haut et du bas de l'écran convergent vers la ligne verte avec V-SIZE.
	V-S-LIN 					
	V-SIZE 				Faire converger les lignes horizontales du haut et du bas de l'écran vers les lignes vertes.	
	V-POSITION				Les lignes horizontales de l'écran se déplacent parallèlement au haut et au bas de l'écran grâce au réglage de convergence de la télécommande ou de l'appareil principal. Quand les lignes horizontales se déplacent à volonté, prendre le degré du mouvement en considération.	

Remarque: KEY est l'abréviation de KEYSTONE et LIN, celle de LINEARITY.
▽ : indique les points fixes
▼ : indiquent les points qui bougent à peine

7.13 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REPARE

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Lors du remplacement de IC307(X24C08P) de l'assemblage du MICROCOMPUTER, la norme PIONEER, la base DPO et la position de convergence sont ramenées au centre de leur plage de variation. Les réajuster en fonction des procédures de réglage spécifiées. Les réglages de l'utilisateur sont également à recommencer, en fonction des prréférences de l'utilisateur.			
2	Réglage de position du télop	Signal vidéo libre	VR301 (M)	Produire le signal de croix d'essai et régler la croix au centre de l'écran.

7.14 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REMPLACE

- Régler la position du télop comme décrit à la section 7.13, puis effectuer les réglages de l'utilisateur.

7.15 QUAND L'ASSEMBLAGE I/O-TEXT EST REPARE

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage de sortie VCO de 13,5 MHz	Pas de signal entré	L605 (I)	Ajuster la fréquence d'oscillation à la broche 17 de IC 602 de l'assemblage I/O-TEXT sur 13,5 MHz ± 100 kHz.

7.16 QUAND L'ASSEMBLAGE I/O-TEXT EST REMPLACE

- Aucun réglage n'est requis.

7.17 QUAND L'ASSEMBLAGE DPO EST REPARE

- Ajuster la sensibilité DPO comme décrit à la section 7.26.

7.18 QUAND L'ASSEMBLAGE DPO EST REMPLACE

- Aucun réglage n'est requis.

7.19 QUAND L'ASSEMBLAGE DYNAMIC FOCUS EST REPARE OU REMPLACE

- Vérifier la mise au point(aux quatre coins de l'écran). Si la mise au point n'est pas parfaite, ajuster VR1 pour obtenir le réglage optimal.

7.20 QUAND L'ASSEMBLAGE HIGH VOLTAGE CONTROL EST REPARE OU REMPLACE

- Au besoin, vérifier H.SIZE, V.SIZE et la convergence.

7.21 QUAND L'ASSEMBLAGE R, G OU B CRT DRIVE EST REPARE OU REMPLACE

- La balance du blanc doit fournir la meilleure image possible. Dans la négative, ajuster la balance du blanc comme suit.

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Réglage de la balance du blanc	Emission ordinaire	Ecran (VR1) (R) (B)	Régler le blanc si l'ajustement correct ne peut être ajusté comme suit. Régler COLOR par la télécommande sur le minimum, puis ajuster les VR de l'écran pour obtenir la meilleure image possible.

7.22 QUAND L'ASSEMBLAGE CRT R, G OU B EST REPARE OU REMPLACE

- La procdéure de remplacement de l'assemblage CRT R, G ou B est décrite à la section "8. Remplacement de l'assemblage CRT".
- Quand un ou deux tubes est remplacé, faire correspondre le nouveau tube avec celui qui est resté. Si les trois tubes sont remplacés, ajuster d'abord le tube du vert, puis ajuster les deux autres par rapport au tube du vert.

N° d'étape	Article de réglage	Signal d'entrée	Point de réglage	Procédure de réglage
1	Angle du bloc de balayage et réglage de centrage	Signal en croix (ou le signal en croix d'essai de la convergence). Se reporter à la Fig. 7-13.	Centrage de l'aimant du bloc de balayage de l'assemblage CRT remplacé Se reporter à la Fig. 7-19.	Ajuster l'angle du bloc de balayage jusqu'à ce que la croix colorée assemblage CRT remplacé. soit parallèle à la croix colorée d'un tube cathodique qui est resté.
				Réinitialiser la position de convergence (en activant CNT à MAX (MIN) à CNT en mode FACTORY ADJ), quand le assemblage CRT rouge ou bleu est remplacé.
				Ajuster l'aimant de centrage du bloc de balayage dans le assemblage CRT remplacé jusqu'à ce que la croix converge.
2	Réglage de la mise au point	Hachure en croix	VR (VR1) de la mise au point couleur remplacée et l'assemblage d'objectif connecté l'assemblage CRT remplacé (se reporter aux Fig. 7-20 et 7-21).	Ajuster la mise au point de l'assemblage CRT remplacé sur l'état optimal. Le fait de déplacer la convergence facilite l'observation. Dans ce cas, veiller la remettre sur la position d'origine quand le réglage est terminé.
3	Réglage de convergence		Faire correspondre la convergence de couleur de l'assemblage CRT remplacé avec la couleur d'un assemblage qui n'a pas été remplacé. Voir la section 7.12.2 REGLAGE DE CONVERGENCE pour les détails sur la procédure d'équilibrage des couleurs. Quand l'assemblage CRT G (vert) est remplacé équluilibrer la convergence des couleurs R, G et B.	
4	Balance du blanc	Signal de barre couleur sans signal couleur	Ecran VR (VR1) VR651 (R) VR653 (B) } VR (V) d'entraînement	Régler la qualité de l'image sur la norme par la télécommande.
				Ajuster VR de l'écran couleur remplacé jusqu'à ce que du gris soit visible dans la zcouleur de la zone sombre.
				Ajuster VR d'entraînement de la couleur jusqu'à ce que la couleur de la zone claire vire au blanc. Quand l'assemblage CRT G est remplacé ajuster légérement les VR d'entraînement [R] et [B].
				Ajuster la luminosité normalisée PIONEER uniquement quand les ajustements susmentionnés n'ont pu s'effectuer à cause d'une luminosit anormale.
5	Réglages standard PIONEER	Ajuster comme décrit aux étape 8 à 14 de la section 7.6.1.		

7.23 QUAND L'ASSEMBLAGE DE L'OBJECTIF EST REMPLACE

- Déposer la pellicule gaufrée et le remplacer par le papier-calque fixé avec du ruban adhésif (se reporter à la Fig. 7-20). Ajuster la mise au point de l'assemblage de l'objectif nouvellement installé, en observant l'image projetée sur le papier-calque.

7.24 QUAND D'AUTRES ASSEMBLAGES SONT REPARES OU REMPLACES

- Aucun réglage n'est requis.

7.25 REGLAGE DE BASE DPO

La fonction DPO possède une section DPO photosensible sur le panneau de commande avant, destinée à juger le niveau de la lumière externe quand l'interrupteur DPO du panneau avant(S859) est enclenché(ON), ce qui par conséquent permet de faire correspondre la qualité d'image du MONITEUR DE PROJECTION(contraste, couleur et luminosité avec la lumière externe.

Deux types normalisés de qualité d'image DPO sont disponibles. Quand l'atmosphère est lumineuse, la première qualité DPO(DPO LIGHT) est choisie. Quand l'atmosphère est sombre, la deuxième qualité DPO(DPO DARK) est choisie. Les données relatives à ces deux qualités DPO sont mémorisées sur IC307(mémorie non volatile).

Par conséquent, si IC307(ou les circuits périphériques) est reparé ou si l'assemblage MICROCOMPUTER est remplacé la qualité d'image doit être à nouveau mémorisée.

Pour mémoriser les données de qualité d'image DPO, se reporter au mode d'emploi. Les valeurs réglées en usine sont présentées ici uniquement à titre de référence, car elles sont sujettes aux changements.

- DPO LIGHT
  - ⊛ (COULEUR) : 0
  - ◐ (CONTRASTE) : 0
  - ☼ (LUMINOSITE) : 0
- DPO DARK
  - ⊛ (COULEUR) : −2
  - ◐ (CONTRASTE) : −15
  - ☼ (LUMINOSITE) : +3

Remarque: Pour ce réglage, il est inutile d'entrer en mode FACTORY ADJ.

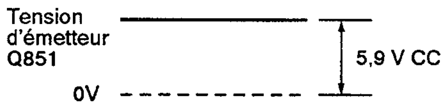
7.26 AJUSTEMENT DE LA SENSIBILITE DPO

La sensibilité de la section DPO photosensible est réglée pour déterminer le niveau de la luminosité externe auquel la fonction DPO s'enclenche. Ce réglage est effectué par VR851 de l'assemblage DPO(se reporter à la Fig. 7-21). et doit être réalisé en fonction des préférences de l'utilisateur. La procédure de réglage utilisée en usine est donnée à titre de référence.

(1) En utilisant une ampoule incandescante comme source de lumière, la lumière est projetée directement dans la section DPO photosensible avec un niveau d'intensité de 50 lux au DPO.

(2) Enclencher l'interrupteur DPO(S859). Le message "DPO ON" apparaît sur l'écran.

(3) VR851 de l'assemblage DPO est ajustée pour obtenir une tension de 5,9 V(± 1 V) sur l'émetteur Q851.



7.27 METHODE DE MESURE DE LA TENSION ANODIQUE

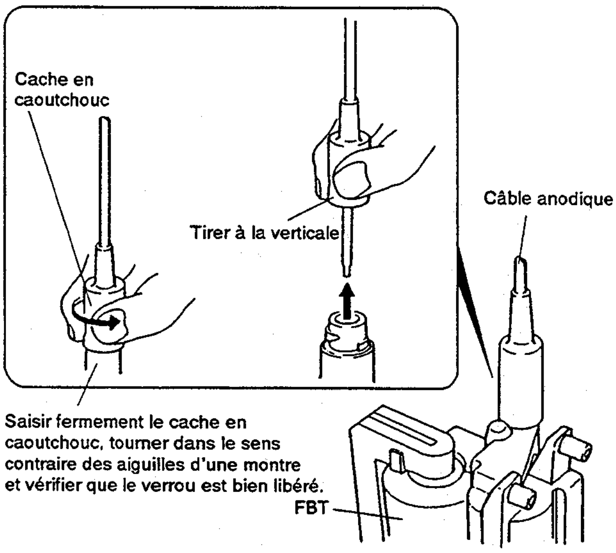
Débrancher le câble anodique FBT comme illustré à la Fig. 7-16. Mesurer le point où le câble entre dans le FBT.

Attention: Prendre des préautions supplémentaires lors de la mesure de cette haute tension. Des hautes tensions sont présentes sur les plaquettes des circuits avoisinnants(assemblage CRT DRIVE, assemblage POWER SUPPLY-DEFLECTION).

AVERTISSEMENT AU REPARATEUR

Avant de débrancher le câble anodique, couper l'alimentation, débrancher la fiche secteur et laisser l'appareil se décharger pendant plus d'une minute.

Remarque: Vérifier l'extension du cache en caoutchouc avant de débrancher le câble.



Saisir fermement le cache en caoutchouc, tourner dans le sens contraire des aiguilles d'une montre et vérifier que le verrou est bien libéré.

Remarque: Lors du rebranchement du câble, procéder dans l'ordre inverse. Aprés le rebranchement, tirer sur le câble pour vérifier qu'il est bien remis en place.

Fig. 7-16 Débranchement du câble anodique

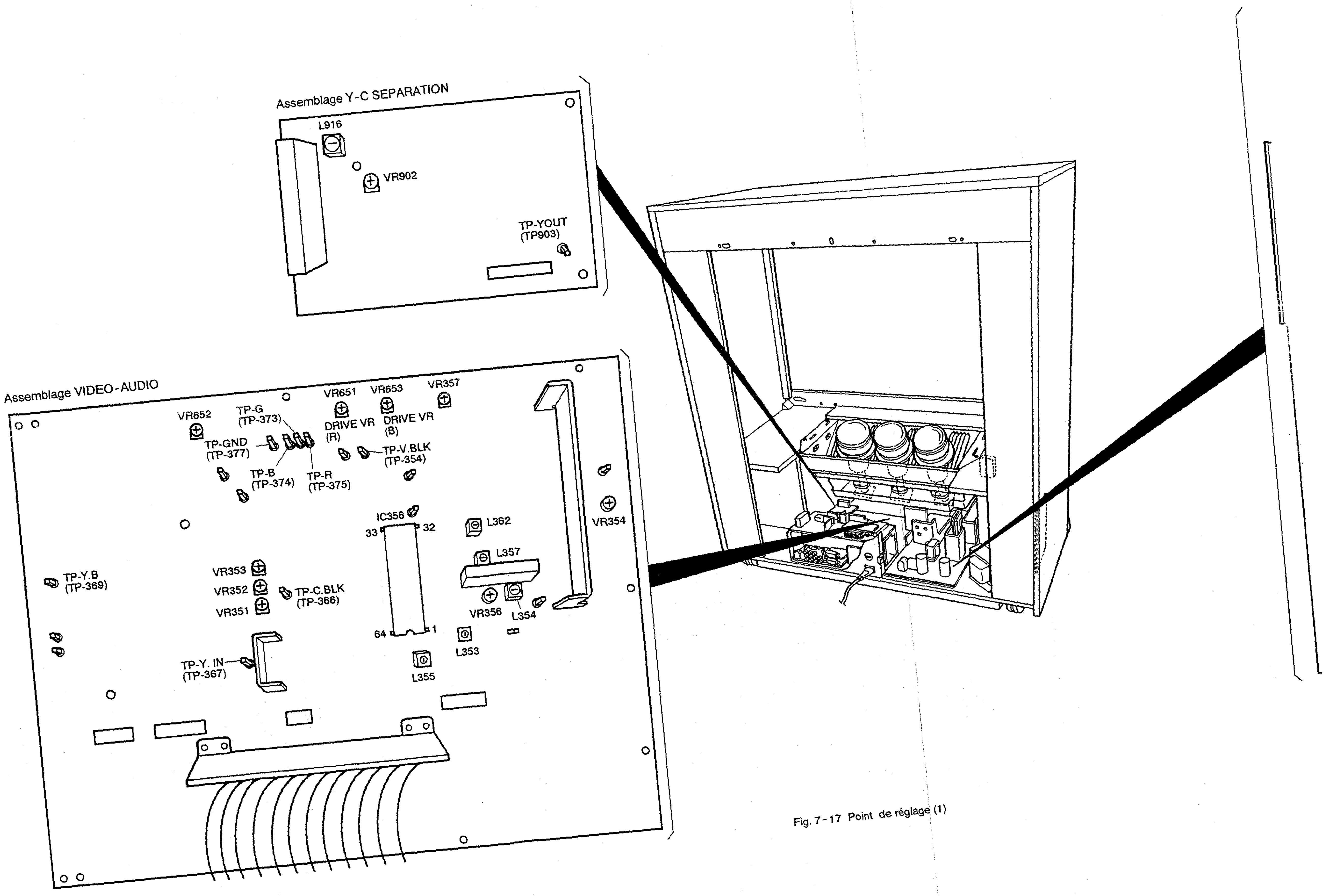

Assemblage Y-C SEPARATION
L916
VR902
TP-YOUT
(TP903)
Assemblage VIDEO-AUDIO
VR652
TP-G
(TP-373)
TP-GND
(TP-377)
TP-B
(TP-374)
TP-R
(TP-375)
VR651
DRIVE VR
(R)
VR653
DRIVE VR
(B)
VR357
TP-V.BLK
(TP-354)
IC356
33
32
64
1
L362
L357
VR354
VR356
L354
L353
L355
TP-Y.B
(TP-369)
VR353
VR352
VR351
TP-C.BLK
(TP-366)
TP-Y. IN
(TP-367)

Fig. 7-17 Point de réglage (1)

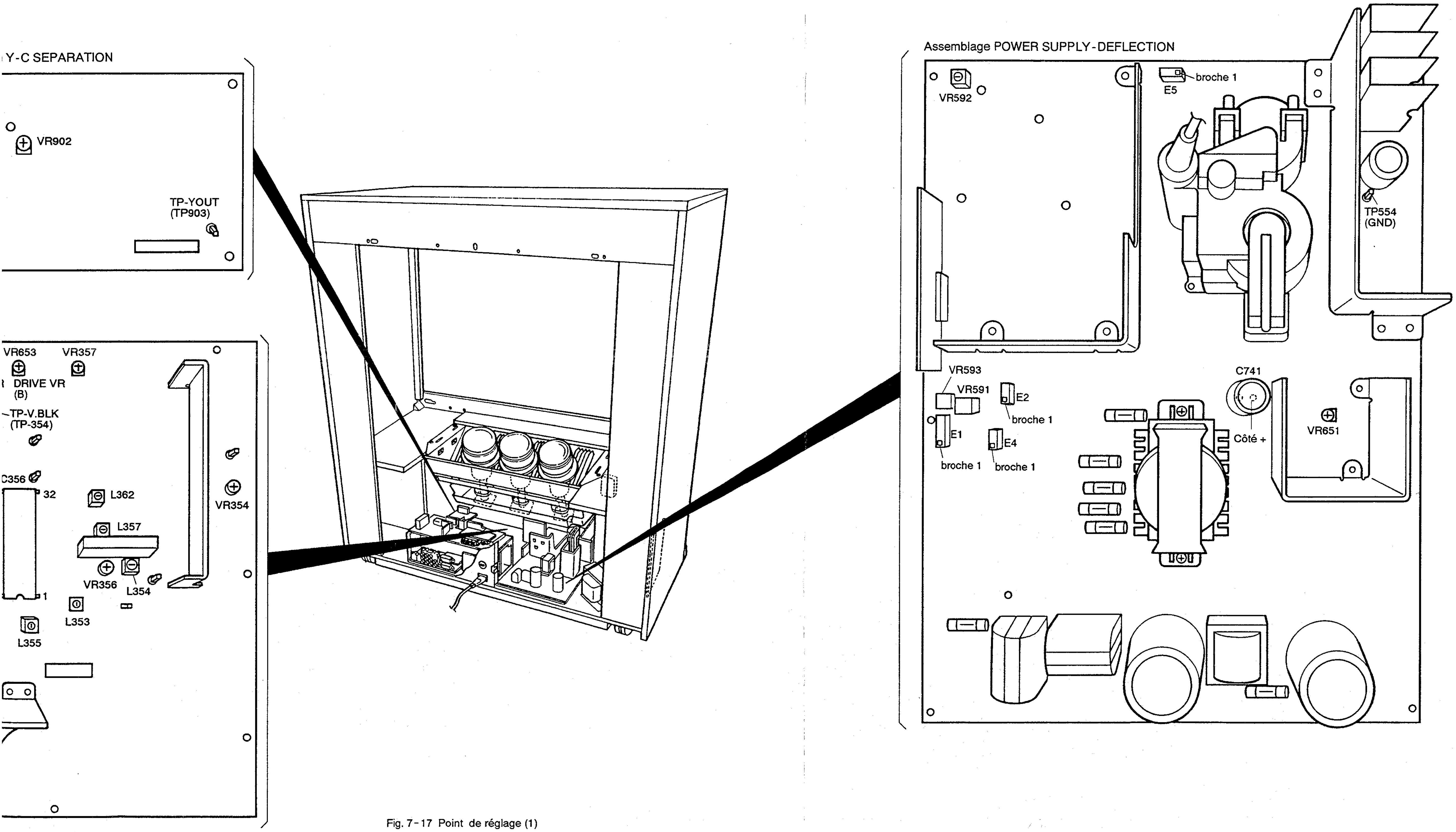

Y-C SEPARATION
VR902
TP-YOUT
(TP903)
VR653
VR357
DRIVE VR
(B)
TP-V.BLK
(TP-354)
C356
32
L362
L357
VR354
VR356
L354
L353
L355
1
Assemblage POWER SUPPLY-DEFLECTION
VR592
broche 1
E5
TP554
(GND)
VR593
VR591
E2
broche 1
E1
E4
broche 1
broche 1
C741
Côté +
VR651

Fig. 7-17 Point de réglage (1)

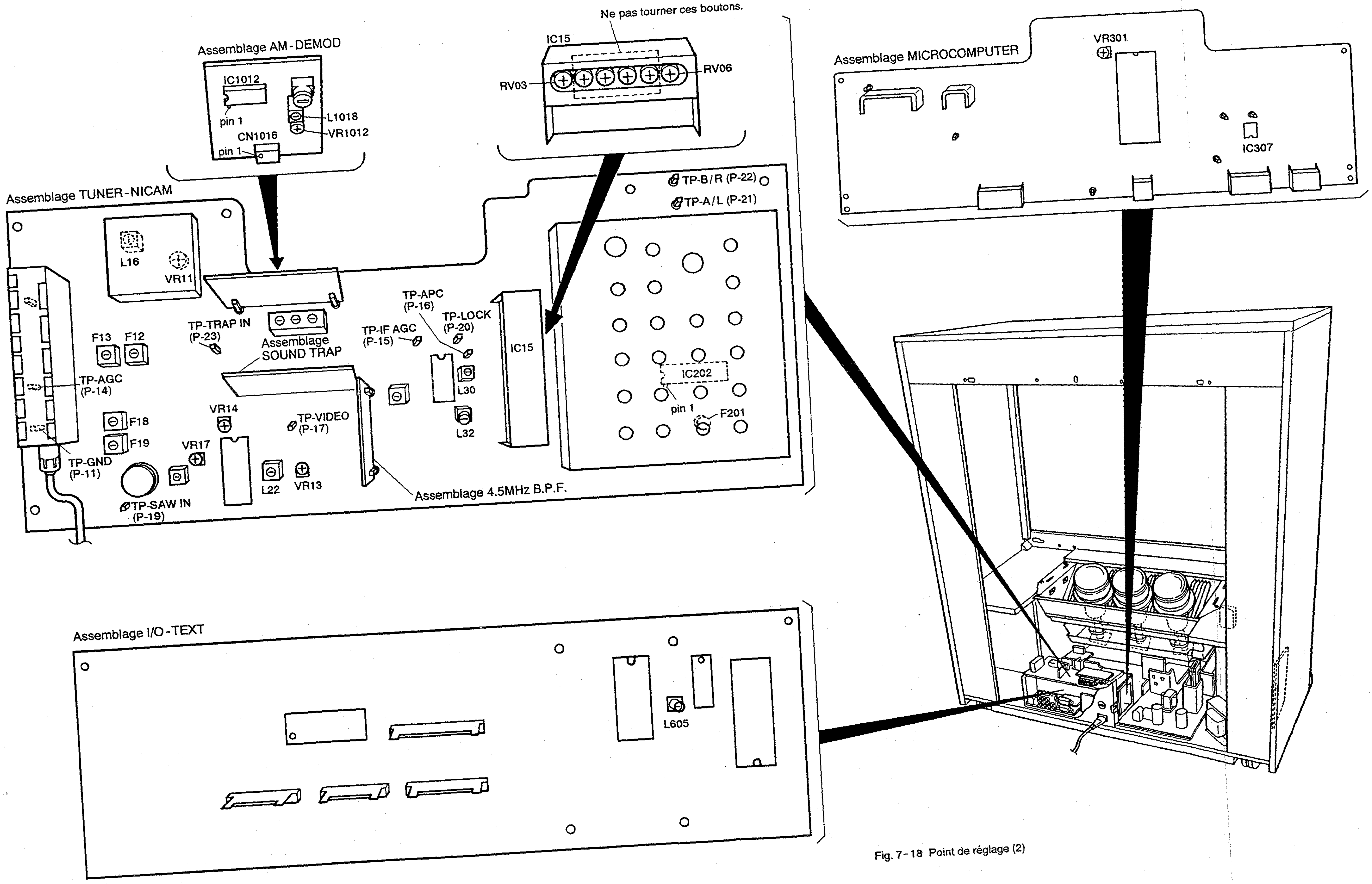
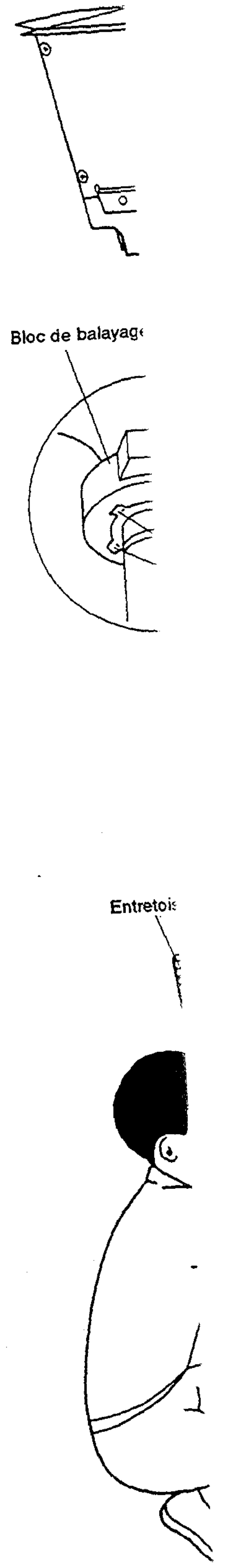

Ne pas tourner ces boutons.
Assemblage AM-DEMOD
IC1012
pin 1
L1018
VR1012
CN1016
pin 1
IC15
RV03
RV06
Assemblage MICROCOMPUTER
VR301
IC307
Assemblage TUNER-NICAM
TP-B/R (P-22)
TP-A/L (P-21)
L16
VR11
F13
F12
TP-TRAP IN
(P-23)
Assemblage
SOUND TRAP
TP-APC
(P-16)
TP-LOCK
(P-20)
TP-IF AGC
(P-15)
IC15
IC202
pin 1
F201
TP-AGC
(P-14)
L30
L32
F18
F19
VR14
TP-VIDEO
(P-17)
VR17
TP-GND
(P-11)
L22
VR13
TP-SAW IN
(P-19)
Assemblage 4.5MHz B.P.F.
Assemblage I/O-TEXT
L605

Fig. 7-18 Point de réglage (2)


Bloc de balayag
Entretoi

ɔurner ces boutons.

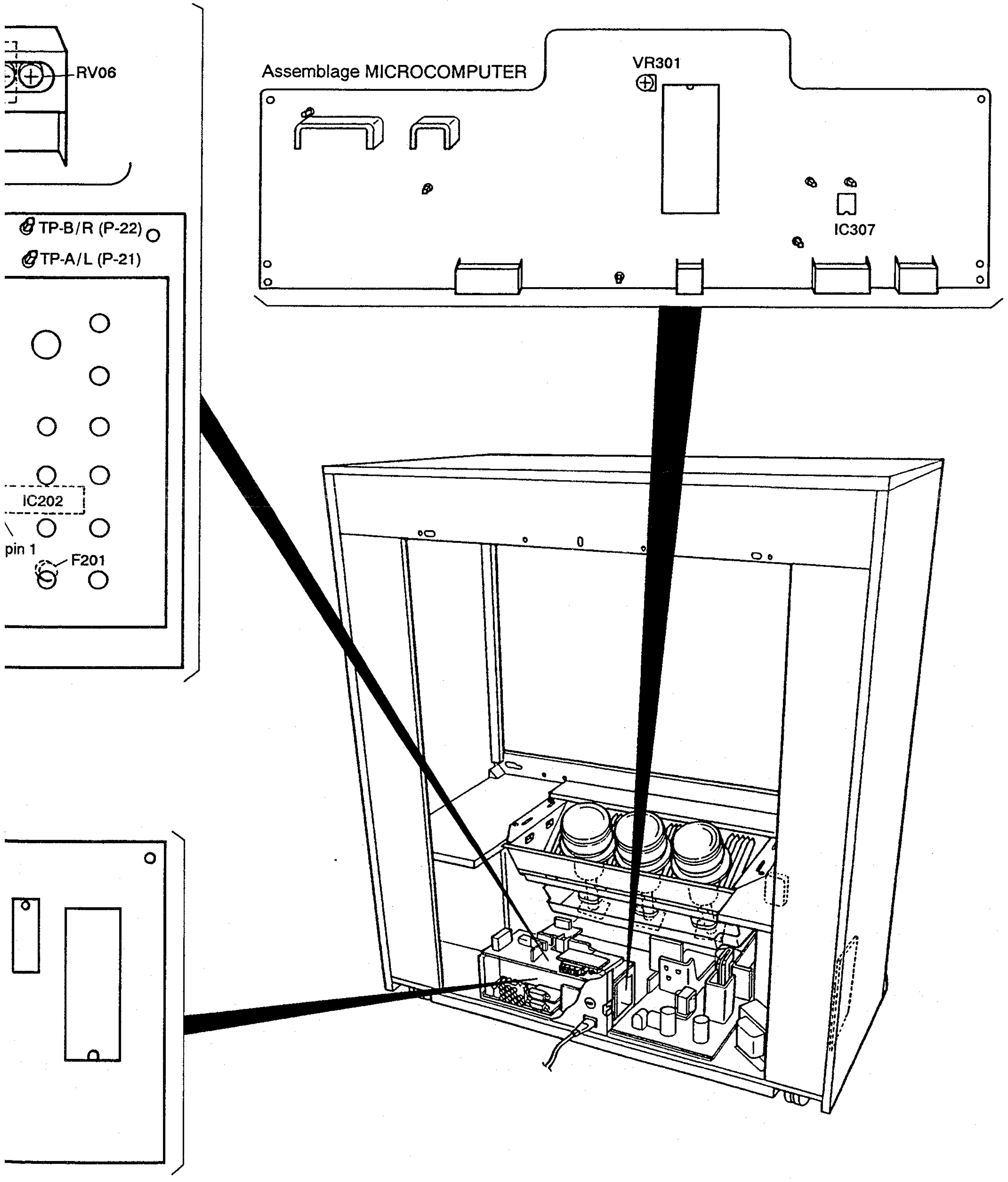

RV06
Assemblage MICROCOMPUTER
VR301
IC307
TP-B/R (P-22)
TP-A/L (P-21)
IC202
pin 1
F201

Fig. 7-18 Point de réglage (2)

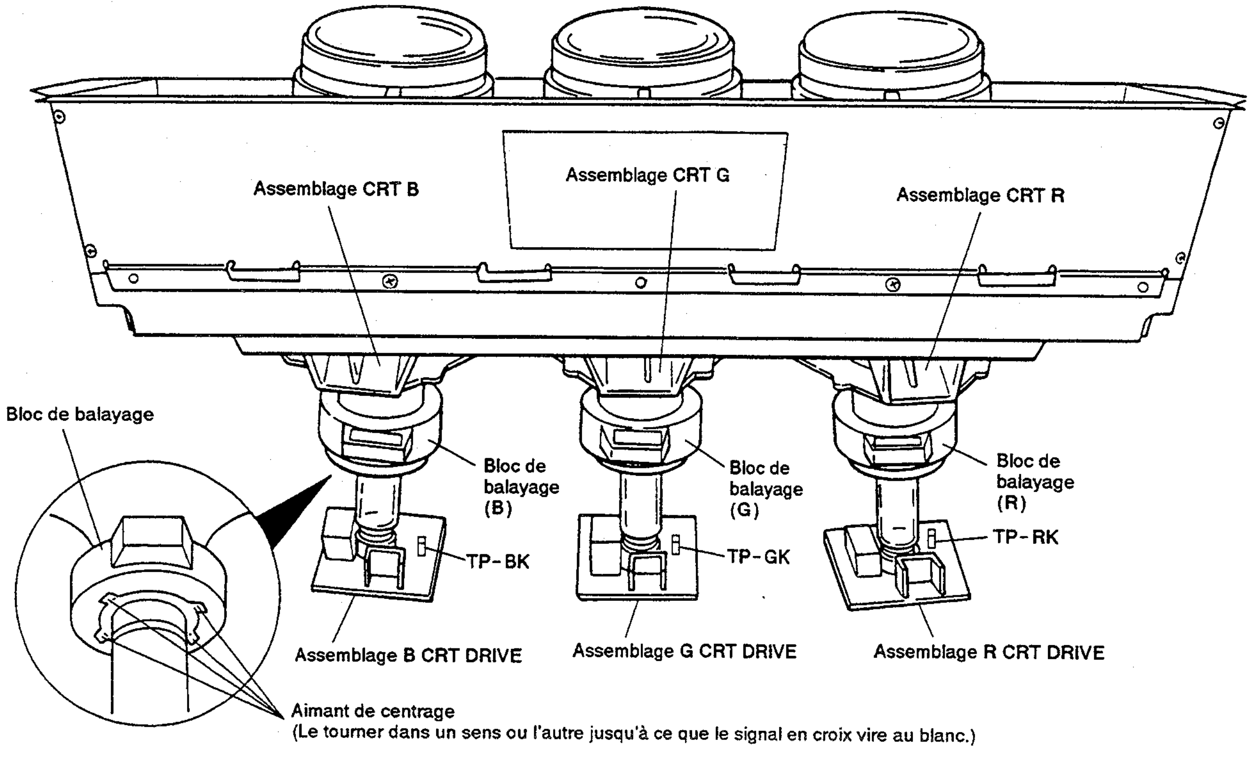

Assemblage CRT B
Assemblage CRT G
Assemblage CRT R
Bloc de balayage
Bloc de balayage (B)
Bloc de balayage (G)
Bloc de balayage (R)
TP-BK
TP-GK
TP-RK
Assemblage B CRT DRIVE
Assemblage G CRT DRIVE
Assemblage R CRT DRIVE
Aimant de centrage
(Le tourner dans un sens ou l'autre jusqu'à ce que le signal en croix vire au blanc.)

Fig. 7-19 Point de réglage (3)

Remarque: Fixer une feuille de papier translucide, comme du papier-calque, tout en insérant des entretoises de 7 mm d'épaisseur pour l'aligner sur la position normale de la surface de l'écran. Utiliser des entretoises de la même épaisseur à gauche et à droite.

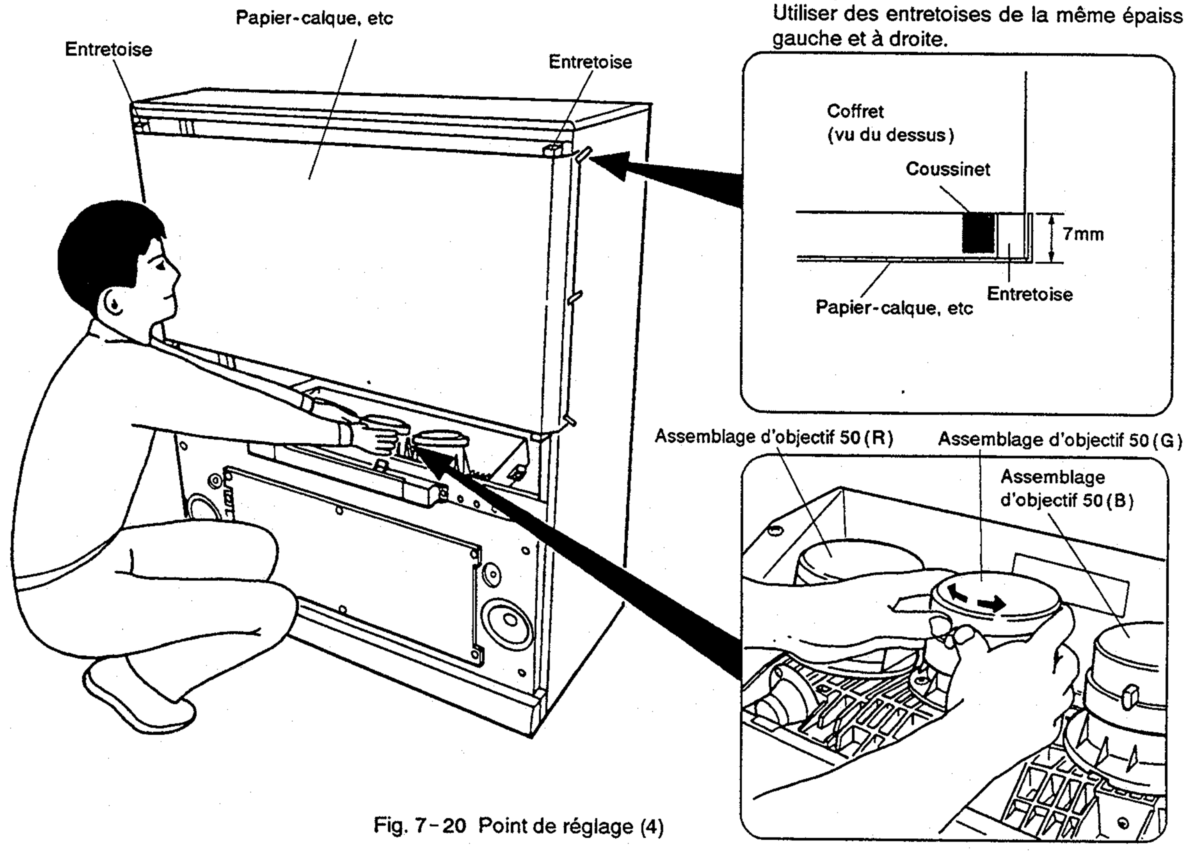

Papier-calque, etc
Entretoise
Entretoise
Coffret
(vu du dessus)
Coussinet
7mm
Entretoise
Papier-calque, etc
Assemblage d'objectif 50 (R)
Assemblage d'objectif 50 (G)
Assemblage d'objectif 50 (B)

Fig. 7-20 Point de réglage (4)

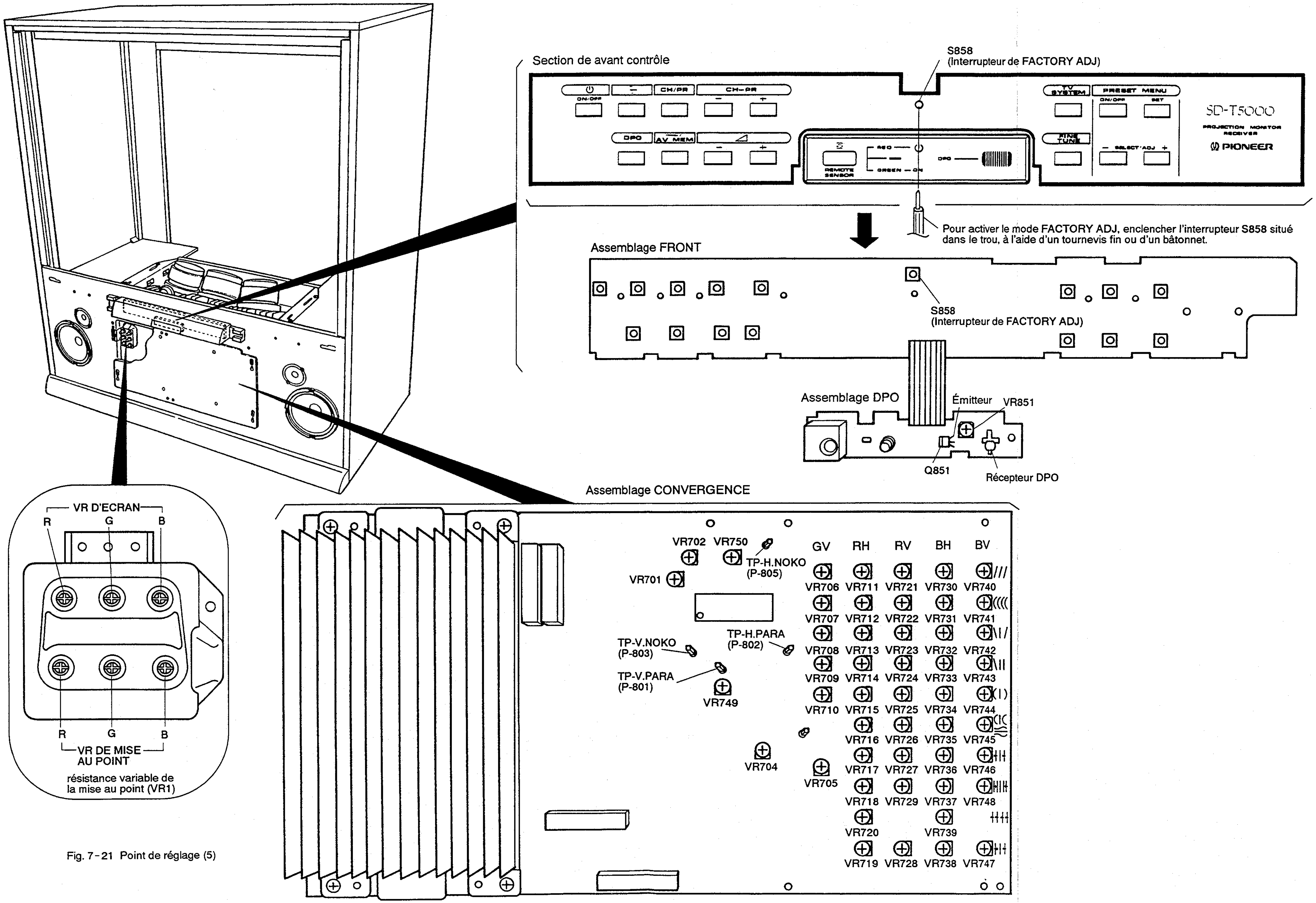

Section de avant contrôle
S858
(Interrupteur de FACTORY ADJ)
ON/OFF
CH/PR
CH-PR
−
+
DPO
AV MEM
REMOTE SENSOR
RED
GREEN — ON
DPO
TV SYSTEM
PRESET MENU
ON/OFF
SET
FINE TUNE
− SELECT/ADJ +
SD-T5000
PROJECTION MONITOR RECEIVER
PIONEER
Pour activer le mode FACTORY ADJ, enclencher l'interrupteur S858 situé dans le trou, à l'aide d'un tournevis fin ou d'un bâtonnet.
Assemblage FRONT
S858
(Interrupteur de FACTORY ADJ)
Assemblage DPO
Émitteur
VR851
Q851
Récepteur DPO
Assemblage CONVERGENCE
VR702
VR750
TP-H.NOKO
(P-805)
VR701
GV
RH
RV
BH
BV
VR706
VR711
VR721
VR730
VR740
VR707
VR712
VR722
VR731
VR741
TP-V.NOKO
(P-803)
TP-H.PARA
(P-802)
VR708
VR713
VR723
VR732
VR742
TP-V.PARA
(P-801)
VR709
VR714
VR724
VR733
VR743
VR749
VR710
VR715
VR725
VR734
VR744
VR716
VR726
VR735
VR745
VR704
VR705
VR717
VR727
VR736
VR746
VR718
VR729
VR737
VR748
VR720
VR739
VR719
VR728
VR738
VR747
VR D'ECRAN
R
G
B
R
G
B
VR DE MISE AU POINT
résistance variable de la mise au point (VR1)

Fig. 7-21 Point de réglage (5)

7. AJUSTES

- El SD-T5000 se conforma a los sistemas de TV estandard de M, B/G, I, D/K, L y L', y los sistemas de color NTSC, NTSC4,43, PAL y SECAM.
  Las diferencias de ajustes entre los sistemas se clarificarán en los textos siguientes.
  Cuando la unidad se usa con un otro sistema que anteriormente ajustado, la imagen y el sonido serán anormales.
  En este caso, reajuste la unidad al sistema corriente.
- Se recomienda fuertemente ajustar la unidad con la pantalla que mira hacia este u oeste.
- Artículos de ajuste se escriben como sigue.

7.1 MODO DE FACTORY ADJ
7.2 CUANDO SE REMEDIA EL MONTAJE DE POWER SUPPLY-DEFLECTION
7.3 CUANDO SE REEMPLAZA EL MONTAJE DE POWER SUPPLY-DEFLECTION
7.4 CUANDO SE REMEDIA EL MONTAJE DE Y-C SEPARATION
7.5 CUANDO SE REEMPLAZA EL MONTAJE DE Y-C SEPARATION
7.6 CUANDO SE REMEDIA EL MONTAJE DE VIDEO-AUDIO
7.7 CUANDO SE REEMPLAZA EL MONTAJE DE VIDEO-AUDIO
7.8 CUANDO SE REMEDIA EL MONTAJE DE TUNER-NICAM
7.9 CUANDO SE REEMPLAZA EL MONTAJE DE TUNER-NICAM
7.10 CUANDO SE REMEDIA EL MONTAJE DE AM-DEMOD
7.11 CUANDO SE REEMPLAZA EL MONTAJE DE AM-DEMOD
7.12 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE CONVERGENCE
7.13 CUANDO SE REMEDIA EL MONTAJE DE MICROCOMPUTER
7.14 CUANDO SE REEMPLAZA EL MONTAJE DE MICROCOMPUTER
7.15 CUANDO SE REMEDIA EL MONTAJE DE I/O-TEXT
7.16 CUANDO SE REEMPLAZA EL MONTAJE DE I/O-TEXT
7.17 CUANDO SE REMEDIA EL MONTAJE DE DPO
7.18 CUANDO SE REEMPLAZA EL MONTAJE DE DPO
7.19 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE DYNAMIC FOCUS
7.20 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE HIGH VOLTAGE CONTROL
7.21 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE R, G O B CRT DRIVE
7.22 CUANDO SE REEMPLAZA EL MONTAJE DE CRT DE R, G O B
7.23 CUANDO SE REEMPLAZA EL MONTAJE DE LENTE
7.24 CUANDO SE REMEDIAN O SE REEMPLAZAN OTROS MONTAJES
7.25 AJUSTE DE BASE DE DPO
7.26 AJUSTE DE SENSITIVIDAD DE DPO
7.27 METODO DE MEDIDA DE TENSION DE ANODO

- Estos procedimientos de ajuste se escriben separadamente con respecto a los ajustes de reemplazo y con respecto a los ajustes de remedios.
- Al reemplazar los montajes, siempre use las piezas recomendadas.
- Los símbolos en el paréntesis que siguen a las posiciones de ajuste indican los montajes que deben ser ajustados.

D : Montaje de POWER SUPPLY-DEFLECTION
VR1 : Resistor variable de foco
V : Montaje de VIDEO-AUDIO
A : Montaje de AM-DEMOD
C : Montaje de CONVERGENCE
M : Montaje de MICROCOMPUTER
T : Montaje de TUNER-NICAM
IC : IC15 en el montaje de TUENR-NICAM
Y : Montaje de Y-C SEPARATION
I : Montaje de I/O-TEXT

- Los puntos de ajuste y los terminales de TP sobre cada montaje se escriben en las figuras 7-17 a 7-21.

Figura 7-17:
El montaje de VIDEO-AUDIO, el montaje de Y-C SEPARATION y el montaje de POWER SUPPLY-DEFLECTION.

Figura 7-18:
El montaje de MICROCOMPUTER, el montaje de I/O-TEXT, el montaje de TUNER-NICAM y el montaje de AM-DEMOD.

Figura 7-19:
Los montajes de R, G, B CRT DRIVE y el yugo de desviación.

Figura 7-20:
Los montajes de lente (Rojo, Verde, Azul).

Figura 7-21:
El montaje de CONVERGENCE, el panel frontal, el montaje de FRONT y el resistor variable de foco.

- Ponga los terminales de entrada en el panel posterior como sigue si no hay otra indicación.
  Señal de VIDEO : terminal de AV4 VIDEO
  Señal de AUDIO : terminal de AV4 AUDIO
- Ponga la calidad de pantalla al estandard por una unidad de control remoto si no hay otra indicación.

7.1 MODE DE FACTORY ADJ

● Sobre el modo de FACTORY ADJ (ajuste en la f'abrica)

El modo de FACTORY ADJ se activa y desactiva por presionando el interruptor S858 a través del agujero pequeño central en la sección del control frontal, con una varilla o equivalente. (Vea la figura 7-21.)

Este modo de FACTORY ADJ consiste del modo de ADJUSTMENT RANGE y el modo de ADJUSTMENT OFFSET. El modo de ADJUSTMENT RANGE se usa para comprobar rápidamente la variación de los controles de pantalla y sonido (COLOR, TINT, CONTR, BRITE, SHARP, BASS, TREBL, BALNC y CONVR) y el modo de ADJUSTMENT OFFSET se usa para poner la calidad de pantalla (al estandard de PIONEER) cuando un cliente se ha definido el ajuste al estandard usando el control remoto.

Cuando el modo de FACTORY ADJ se activa y el funcionamiento de CNT-a-MIN-a-CNT o CNT-a-MAX-a-CNT se hace en el modo de ADJUSTMENT RANGE, todos los valores de memoria de AV puestos por el cliente van a cancelarse a "0" y la posición de convergencia va a ser al centro de la gama variable.

Después de desactivar el modo de FACTORY ADJ, ponga los valores de memoria de AV y la posición de convergencia otra vez como se requieren.

● Como se usa el modo de FACTORY ADJ

① Mode de ADJUSTMENT RANGE

Cuando se presiona el interruptor de S858 en la sección del control frontal (vea la figura 7-21), para activar el modo de FACTORY ADJ, la pantalla indica el modo de ADJUSTMENT RANGE como se ve en la figura 7-1 ①.

En este modo, los puntos del centro (CNT), mínimo (MIN) y máximo (MAX) en las gamas de control variable de la calidad de pantalla, de la calidad de sonido y de la posición de convergencia se pueden comprobar fácilmente (no es necesario de cambiar los ajustes corrientes con las teclas +⊿-.)

Para comprobar, use las teclas numerales sobre el control remoto, que corresponden a los funcionamientos de la pantalla y el control de sonido como siguen.

$\boxed{1}$:COLOR
$\boxed{2}$:TINT
$\boxed{3}$:CONTR
$\boxed{4}$:BRITE
$\boxed{5}$:SHARP
$\boxed{7}$:BASS
$\boxed{8}$:TREBL
$\boxed{9}$:BALNC
$\boxed{0}$:CONVR (Convergencia)

Por ejemplo, al comprobar la variación de TINT, presione la tecla $\boxed{2}$ del control remoto. Cada vez que presiona la tecla $\boxed{2}$ los puntos de CNT, MIN y MAX se muestran a continuación.

Maneje las otras teclas de la misma manera que los artículos respectivos. (Al comprobar los controles de pantalla y sonido, use la señal cuyas variaciones se reconocen fácilmente.)

Notas:

- $\boxed{9}$: Se usa cuando se compruebe BALNC.
  CNT : Para emitir la señal de ambos canales.
  MIN : Para emitir la señal del canal derecho solamente.
  MAX : Para emitir la señal del canal izquierdo solamente.
- $\boxed{0}$:Se usa cuando se compruebe CONVR.
  CNT : Para la posición central.
  MIN : Para mudar hacia la derecha superior.
  MAX : Para mudar hacia la izquierda inferior.

② Modo de ADJUSTMENT OFFSET (modo de ajuste de estandard PIONEER)

Al presionar la tecla MUTE del control remoto, el modo cambia desde ADJUSTMENT RANGE al modo de ADJUSTMENT OFFSET como se ve en la figura 7-1 ②.

El ajuste de imagen (COLOR, TINT, CONTR, BRITE, SHARP) en este modo será seleccionado como el modo de estandard (estandard de PIONEER) usando el control remoto.

Para ajustar, seleccione el artículo con una tecla designada o las teclas numéricas ($\boxed{1}$ a $\boxed{5}$ y después, ajuste el artículo seleccionado con las teclas +⊿- de acuerdo con el procedimiento de ajuste especificado.

El valor de referencia se indica en la esquina derecha inferior de la pantalla.

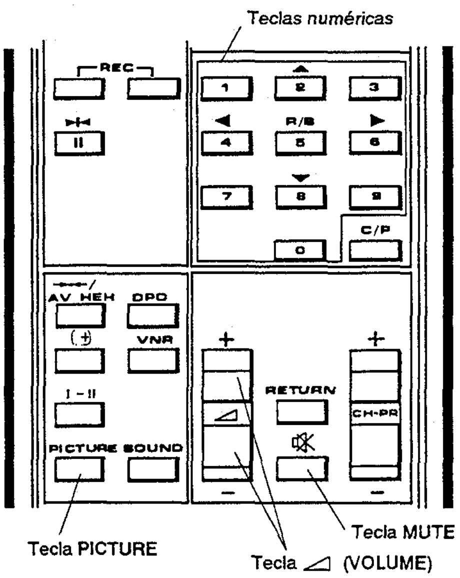
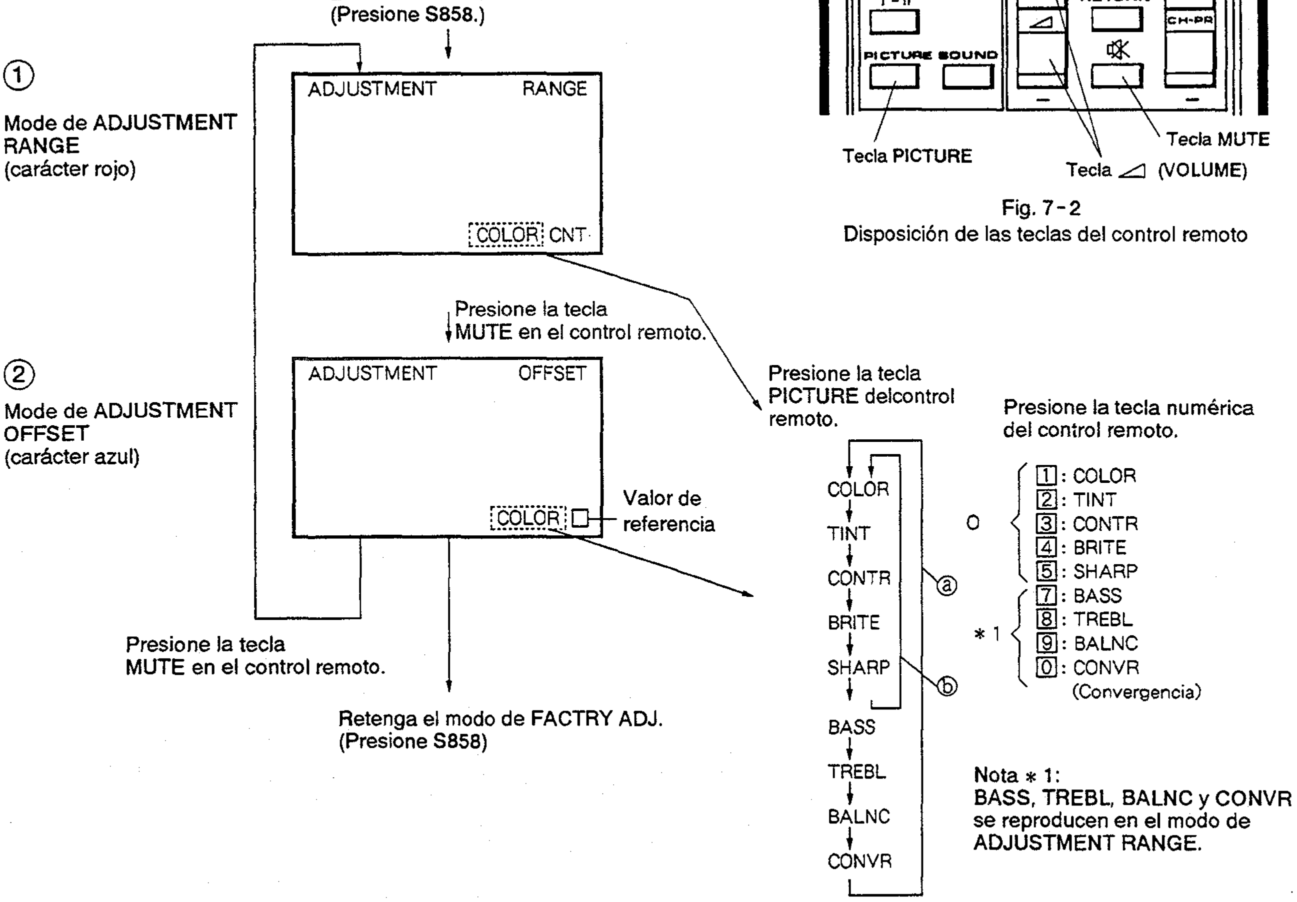

Teclas numéricas
REC
1
2
3
4
R/■
5
6
7
8
9
0
C/P
AV HEH
DPD
VNR
I - II
PICTURE
SOUND
RETURN
CH-PR
+
−
Tecla PICTURE
Tecla MUTE
Tecla ⊿ (VOLUME)

Fig. 7-2
Disposición de las teclas del control remoto


Entre el modo de FACTORY ADJ.
(Presione S858.)
①
Mode de ADJUSTMENT RANGE
(carácter rojo)
ADJUSTMENT RANGE
COLOR CNT
Presione la tecla MUTE en el control remoto.
②
Mode de ADJUSTMENT OFFSET
(carácter azul)
ADJUSTMENT OFFSET
COLOR □
Valor de referencia
Presione la tecla MUTE en el control remoto.
Retenga el modo de FACTRY ADJ.
(Presione S858)
Presione la tecla PICTURE delcontrol remoto.
COLOR
TINT
CONTR
BRITE
SHARP
BASS
TREBL
BALNC
CONVR
ⓐ
ⓑ
O
Presione la tecla numérica del control remoto.
1: COLOR
2: TINT
3: CONTR
4: BRITE
5: SHARP
*1
7: BASS
8: TREBL
9: BALNC
0: CONVR
(Convergencia)

Nota * 1:
BASS, TREBL, BALNC y CONVR se reproducen en el modo de ADJUSTMENT RANGE.

ⓐ: Modo de ADJUSTMENT RANGE
ⓑ: Modo de ADJUSTMENT OFFSET

Fig.7-1 Mainfestación de pantalla en el modo de FACTRY ADJ

7.2 CUANDO SE REMEDIA EL MONTAJE DE POWER SUPPLY-DEFLECTION

Nota: VR591 y VR593 se protegen por las cubiertas de defensa (ANH1166) para que no se ajusten. No intente a hacer girar los volumenes por quitando la cubierta. (De otra manera, el circuito protectivo de sentividad contra el rayo X y la tensión anodo será afectado.)

- Los puntos de prueba de ajuste (TP) están colocados en el montaje de POWER SUPPLY - DEFLECTION.

7.2.1 Sección de Alimentación

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de alimentación de 135V	Señal de monoscopio	VR651(D)	Ajuste la tensión de ambos lados de C741 (montaje de POWER SUPPLY-DEFLECTION) a 135V ± 1V.

- **Comprobación de la tensión de cada salida**

Después de hacer el ajuste de +135V, confirme cada tensión como sigue.

Punto de medida	Tensión	Punto de medida	Tensión
E1 +13.5V (alfiler 9 ó 10) para GND (alfier 11)	+13.5V ± 0.5V	E2 +35V (alfiler 3 ó 4) para GND (alfiler 1 ó 2)	+32V ± 5V (menos de +40V)
E1 +8V (alfiler 7 ó 8) para GND (alfiler 11)	$+8V^{+2V}_{-1V}$		
E1 +30V (alfiler 13) para GND (alfiler 11)	+30V ± 5V	E4 +25V (alfiler 5) para V.GND (alfiler 4 ó 3)	+25V ± 3V
E1 +39V (alfiler 14) para GND (alfiler 11)	+39V ± 3V	E4 -24V (alfiler 1) paraV.GND (alfiler 4 ó 3)	-24V ± 3V
E5 H.T.+ (alfiler 4) para H.T. − (alfiler 5)	+6.25V ± 0.25V	E5 +220V (alfiler 1) para TP554 (GND)	+220V ± 20V

7.2.2 Sección de desviación

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de foco	Señal de trampa de cruz	VR de foco (VR1)	Compruebe el foco de cada montaje de CRT. (El foco es más fácil de juzgar si se cambian el rojo y el azul por girando los controles de convergencia del control remoto como se ve en la figura 7-13. Reajuste estos controles a sus posiciones originales después del ajuste de foco.)
2	Ajuste del tamaño horizontal	Señal de monoscopio o radiodifusión ordinaria	VR592 (D)	Ajuste los armazones derecho e izquierdo a los valores siguientes. Cuando ajusta con la radiodifusión ordinaria, ajuste para que la pantalla no esté negra. • Para NTSC y NTSC 4,43 • Para PAL y SECAM Derecho = 92,5 ± 2% Derecho = 94,5 ± 2% Izquierdo = 92 ± 2% Izquierdo = 93,5 ± 2% Después de este ajuste, compruebe la convergencia, V.SIZE y los ajustes de H.BLK.
3	Ajuste del equilibrio de blanco	Radiodifisión ordinaria	Pantalla (VR1) (R), (B)	Ajuste el blanco como sigue, si no se puede obtener el ajuste apropiado. Ponga COLOR del control remoto al mínimo y ajuste VR de la pantalla para obtener la mejor imagen.

7.3 CUANDO SE REEMPLAZA EL MONTAJE DE POWER SUPPLY-DEFLECTION

Nota: VR591 y VR593 en el montaje de POWER SUPPLY-DEFLECTON que se dispone como una pieza de repuesto se protegen por la cubierta de defensa (ANH1166).
Nunca quite la cubierta (ANH 1166).

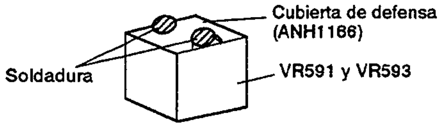


Fig. 7-3 Cubierta de defensa

7.3.1 Sección de alimentación

- Se requiereno ajuste.

7.3.2 Sección de desviación

- Ajuste el foco, el tamaño horizontal y el equilibrio de blanco como se escriben en la sección 7.2.2.

7.4 CUANDO SE REMEDIA EL MONTAJE DE Y-C SEPARATION

- Ajuste solamente para el sistema NTSC.

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste del filtro de peine	Barra de color	VR902 (Y) L916 (Y)	Ajuste para que los elementos de la señal de color a TP-YOUT (TP-903) en el montaje de Y-C SEPARATION sean más reducidos que posible.
2	Compruebe para el estandard de PIONEER.	Si no se obtiene la mejor pantalla, ajuste como se escribe en la sección 7.6.		

7.5 CUANDO SE REEMPLAZA EL MONTAJE DE Y-C SEPARATION

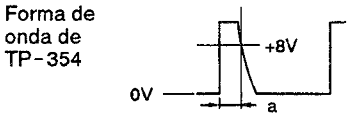
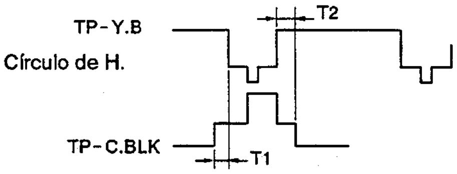
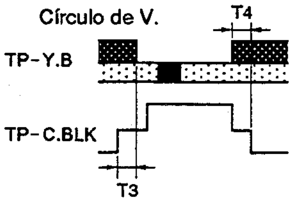
- Se require no ajuste.

7.6 CUANDO SE REMEDIA EL MONTAJE DE VIDEO-AUDIO

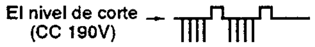
- Los puntos de ajuste de prueba (TP) están colocados en el montaje de VIDEO-AUDIO si no hay otra indicacción.
- Antes de ajustar, compruebe el ajuste del filtro de peine como se escribe en la sección 7.4 (solamente para el sistema NTSC).

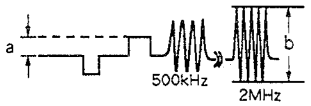
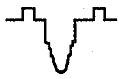
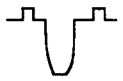
7.6.1. Procedimiento de ajuste

- Las etapas 5 y 6 se escriben separadamente en otras tablas. Vea las secciones 7.6.2. y 7.6.3.

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de V. SIZE *1	Señal de monoscopio	VR357 (V)	Ajuste los armazones superior e inferior a los valores siguientes. Cuando ajusta con la radiodifusión ordinaria, ajuste para que la pantalla no esté negra. • Para NTSC y NTSC 4,43 Superior :91 ± 3% Inferior : 95 ± 3% • Para PAL y SECAM Superior : 92 ± 3% Inferior : 94 ± 3% Después de este ajuste, compruebe la convergencia y los ajustes de H. SIZE.
2	Ajuste de anchura de V. BLK (1) *1	Señal de blanco de 100%	VR354 (V)	Ajuste el nivel de TP-V.BLK (TP-354) la anchura de pulso a "a" para que sea el valor especifi cado abajo en el punto de +8V.  •NTSC y NTSC 4.43 a=1.2msec •PAL a=1.2msec ± 60 μ sec •SECAM a=1.2msec
3	Ajuste de anchura de H. BLK	Señal de blanco de 100%	VR352 (V)	Mientras observando simultáneamente TP-Y. B (TP-369) y TP-C. BLK (TP-366), ajuste T1 en el círculo H al valor especificado abajo. Después de ajustar T1, compruebe que T2 es el valor especificado abajo. • Para NTSC y NTSC 4,43 T1=1.2 μ sec ± 200nsec T2=2.4 μ sec ± 400nsec • Para PAL y SECAM T1=1.0 μ sec ± 400nsec T2=1.8 μ sec ± 400nsec 
4	Ajuste de anchura de V. BLK (2) *1	Señal de blanco de 100%	VR351 (V) VR353 (V)	Mientras observando el círculo de V. en la etapa 3, ajuste T3 al valor especificado abajo. Después de ajustar T3, compruebe que T4 es el valor especificado abajo. ① Para el sistema NTSC o NTSC 4,43 Ajuste T3 y T4 a los valores siguientes con VR351. T3 = 300 μ sec ± 50 μ sec T4 = 390 μ sec ± 100 μ sec Sin una señal del sistema PAL o SECAM se recibe después de este ajuste, el valor ajustado se desvia. Usando PAL o SECAM SG, ajuste VR353 para obtener el valor ② como se ve abajo.  ② Para el sistema PAL o SECAM Ajuste T3 y T4 a los valores siguientes con VR353. T3 = 350 μ sec ± 50 μ sec T4 = 500 μ sec ± 100 μ sec

*1: Cuando se realice el ajuste de V.SIZE, asegúrese de comprobar los ajustes de V. BLK (1) y (2).

<table>
<tr><th>Número de etapa</th><th colspan="2">Artículo de ajuste</th><th>Señal de entrada</th><th>Punto de ajuste</th><th>Procedimiento de ajuste</th></tr>
<tr><td>5</td><td colspan="2">Ajuste de sistema de PAL</td><td colspan="3">Ajuste la línea de retraso de cristal al demodulador de PAL como se escribe en la sección 7.6.2. (Ajuste solamente para el sistema PAL.)</td></tr>
<tr><td>6</td><td colspan="2">Ajuste de sistema de SECAM</td><td colspan="3">Ajuste el rollo de SECAM IDENT, el rollo detectivo y BELL FILTER como se escriben en la sección 7.6.3. (Ajuste solamente para el sistema SECAM.)</td></tr>
<tr><td rowspan="2">7</td><td colspan="2" rowspan="2">Ajuste de equilibrio de blanco</td><td rowspan="2">Señal de barra de color sin la señal de color</td><td rowspan="2">Pantalla VR (R), (B) (VR1)
VR651(R) } Paseo de
VR653(B) } VR(VR1)</td><td>Ajuste las pantallas VR (R) y (B) hasta que el color gris puede ser visto en el área obscura. (No mueva el VR verde en esta etapa.)</td></tr>
<tr><td>Usando el paseo VR, ajuste el color en el área obscuro a blanco.</td></tr>
<tr><td>8</td><td rowspan="8">Ajuste al estandard de PIONEER</td><td colspan="4">Ponga al estandard el PIONEER del modo de FACTORY ADJ. (Cuando se completa el ajuste, vuelve a la condición normal.)</td></tr>
<tr><td rowspan="2">9</td><td rowspan="2">Ajuste de brillo</td><td rowspan="2">Señal de trampa de cruz</td><td>COLOR (*2)</td><td>Disminuya el color por el control remoto.</td></tr>
<tr><td>BRITE (*2)</td><td>Ajuste el nivel de corte en TP-RK del montaje R.CRT DRIVE a CC190V. (Después del ajuste, confirme el equilibrio de blanco.)


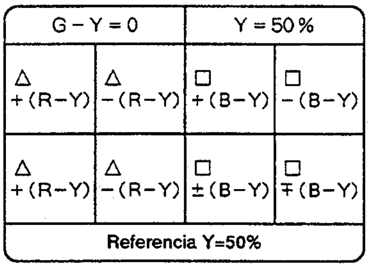
(Después de este ajuste, ajuste de color como se escribe en la etapa 4.)</td></tr>
<tr><td>10</td><td>Ajuste de agudeza</td><td>Explosión multipulada</td><td>SHARP (*2)</td><td>En TP-G (TP-373), ajuste la proporción de "b" (el valor de pico-a-pico a 2MHz) a "a" (nivel desde negro a blanco) como sigue.
• Con NTSC y NTSC 4,43
a : b = 2 : 2,7 (+ 2,6dB)
• Con PAL
a : b = 2 : 2,6 (+ 2,3dB)
• Con SECAM
a : b = 2 : 2,7 (+ 2,6dB)

 </td></tr>
<tr><td>11</td><td>Ajuste de color</td><td rowspan="2">Barra de color</td><td>COLOR (*2)</td><td>Ajuste la pantalla a la condición óptima.</td></tr>
<tr><td>12</td><td>Ajuste de tinte (*3)</td><td>TINT (*2)</td><td>Ajuste la pantalla a la condición óptima.</td></tr>
<tr><td>13</td><td rowspan="2">Ajuste de contraste</td><td rowspan="2">Señal libre</td><td>CONTR (*2)</td><td>Ajuste la pantalla a la condición óptima.</td></tr>
<tr><td>14</td><td>—</td><td>En TP-BK del montaje de B. CRT DRIVE, confirme que la señal se forma como sigue abajo.

Forma de onda dinstinta

Forma de onda no distinta</td></tr>
<tr><td rowspan="4">15</td><td colspan="2" rowspan="4">Ajuste de azul</td><td rowspan="4">Señal de cruz</td><td rowspan="2">—</td><td>Ajuste la salida de SG de la señal de cruz de entrada al nivel máximo.</td></tr>
<tr><td>Aumente le contraste por el control remoto.</td></tr>
<tr><td rowspan="2">VR652 (V)</td><td>Haga girar VR652 completamente en el sentido de las agujas del reloj. (Se resulta en azul.)</td></tr>
<tr><td>Haga girar VR hasta que no hay azul en la línea de cruz vertical en la pantalla.</td></tr>
</table>

*2: Ajuste con el control remoto.
*3: Ajuste solamente para NTSC y NTSC 4,43.

7.6.2 Ajuste del sistema PAL

- Este ajuste se separa desde la tabla en 7.6.1 para el sistema PAL.
- El ajuste se requiere el dibujo DEM.
- Si no se ejecute el ajuste correctamente, los colores cambian en la cada línea de examinación, y esto se puede observar solamente por usando el dibujo DEM.

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
5-1	Ajuste de la línea de retraso de cristal para el demodulador de PAL.	Dibujo de PAL DEM	——	Ponga el osciloscopio como sigue: H= 2mS/div: V=100mV/div. Observe las formas de onda al alfiler 60 (R-Y IN) y el alfiler 62 (B-Y IN) de IC356.
5-2			L354 (V)	Ajuste para que la forma de onda del área 1 de medida en la figura 7-5 (figura 7-6 a) aparezca como se ve en la figura 7-6 b.
5-3			VR356 (V)	Ajuste para que la forma de onda del área 2 de medida en la figura 7-5 aparece como se ve en la figura 7-6 c.
5-4	Repita las etapas 5-2 y 5-3 hasta que la pantalla más clara se puede obtener. (Ajuste para que el área 1 de medida está puesto debajo de 50mV p-p, y el área 2 de medida está puesto debajo de 180mV p-p.)			


G-Y=0
Y=50%
△ +(R-Y)
△ -(R-Y)
□ +(B-Y)
□ -(B-Y)
△ +(R-Y)
△ -(R-Y)
□ ±(B-Y)
□ ∓(B-Y)
Referencia Y=50%

Nota;
△;(B − Y)=0
□;(R − Y)=0

Fig. 7-4 El dibujo DEM

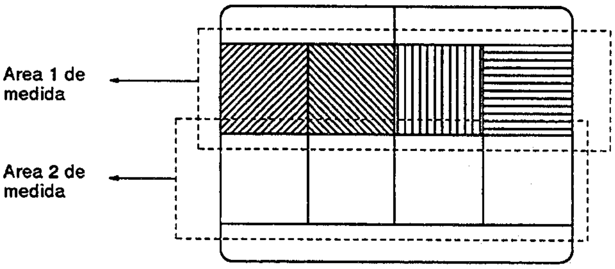
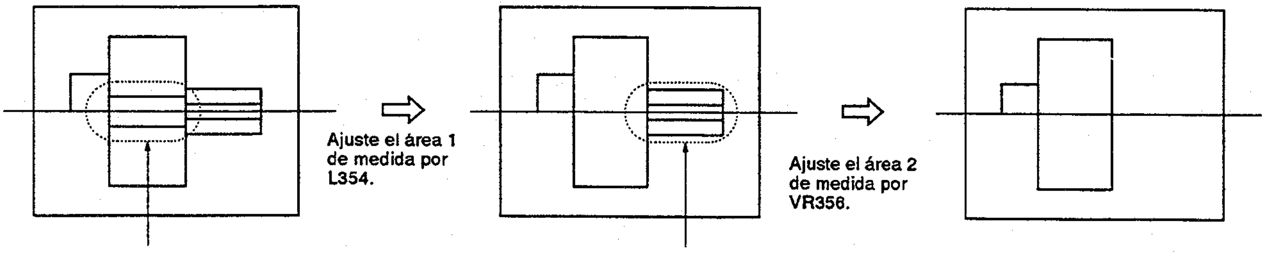

Area 1 de medida
Area 2 de medida

Fig. 7-5 Area de medida


Ajuste el área 1 de medida por L354.
Ajuste el área 2 de medida por VR356.

Forma de onda del área 1 de medida

a.

Forma de onda del área 2 de medida

b.

Después de ajustar

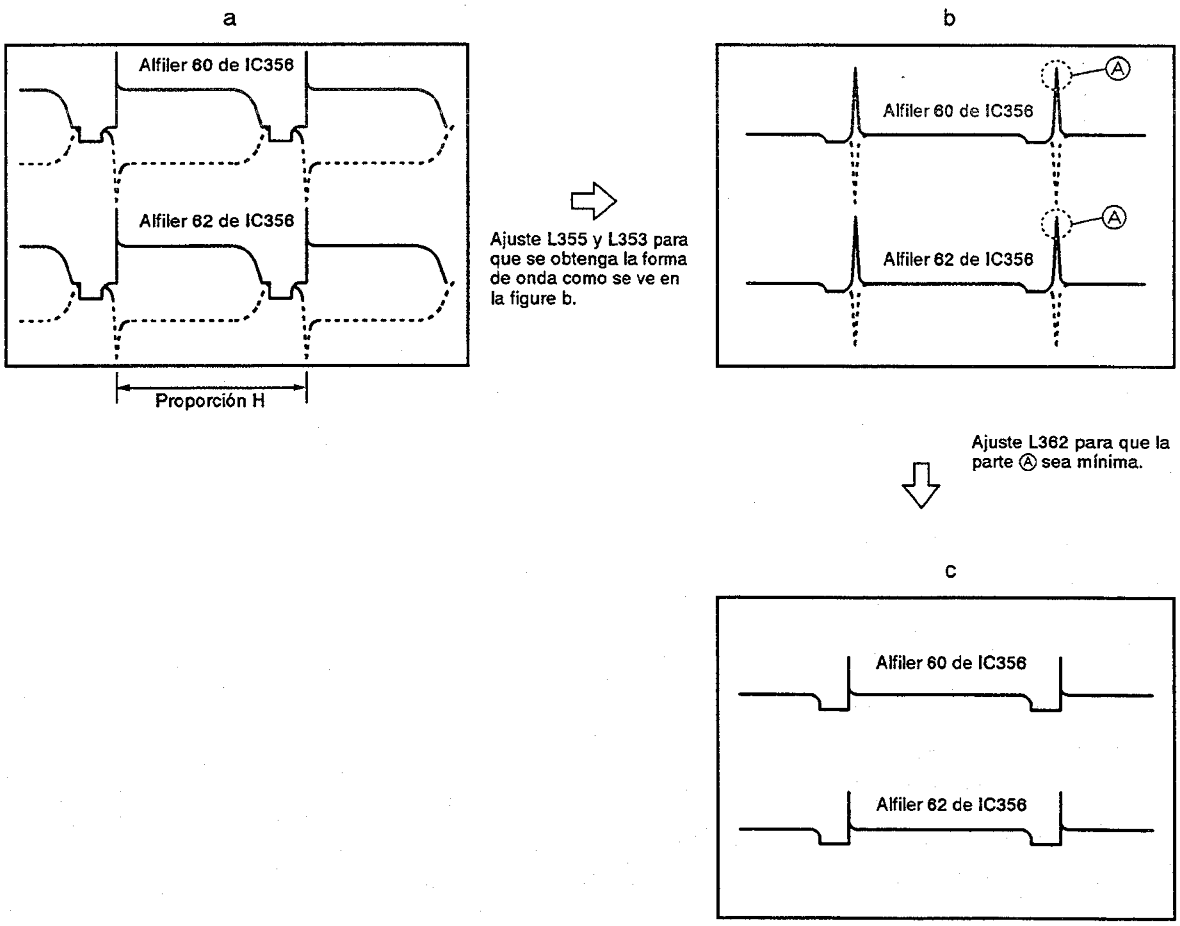
c.

Fig. 7-6 Pantalla del osciloslopio

7.6.3 Ajuste del Sistema SECAM

- Este ajuste se separe para el sistema SECAM.

Número de etapa	Aetículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
6-1	Ajuste de identidad de SECAM	Barra de color SECAM	L357 (V)	Ajuste para que la tensión de CC al alfiler 23 de IC356 sea máxima.
6-2	Ajuste del rollo de detección y del filtro de campana.	Señal de negro (incluyendo el portador de color SECAM)	L355 (V): Alfiler 60 (R-Y IN) L353 (V): Alfiler 62 (B-Y IN)	Ajuste para que la forma de onda se aparezca como se ve en la figura 7-7 b al alfiler 60 (R-Y IN) y alfiler 62 (B-Y IN) de IC356.
6-3			L362 (V)	Ajuste para que la forma de onda se aparezca como se ve en la figura 7-7 c al alfiler 60 (R-Y IN) y alfiler 62 (B-Y IN) de IC356.
6-4	Repita las etapas 6-2 y 6-3 hasta que se obtenga la mejor pantalla. Compruebe que las barras de color se muestran correctamente en la pantalla después del ajuste.			


a
Alfiler 60 de IC356
Alfiler 62 de IC356
Proporción H
b
Ⓐ
Alfiler 60 de IC356
Ⓐ
Alfiler 62 de IC356
c
Alfiler 60 de IC356
Alfiler 62 de IC356

Ajuste L355 y L353 para que se obtenga la forma de onda como se ve en la figure b.

Ajuste L362 para que la parte Ⓐ sea mínima.

Fig. 7-7 Ajuste del rollo de detección de SECAM

7.7 CUANDO SE REEMPLAZA EL MONTAJE DE VIDEO-AUDIO

- Antes del ajuste, compruebe el ajuste del filtro de peine como se escribe en la sección 7.4. (solamente para el sistema NTSC).
- Ejecute el ajuste del tamaño V, ajuste de la anchura de V.BLK (I), el ajuste de la anchura de H.BLK, el ajuste de la anchura de V.BLK (2), el equilibrio de blanco, el puesto del estandard de PIONEER, y el ajuste de azul como se escriben en la sección 7.6.

7.8 CUANDO SE REMEDIA EL MONTAJE DE TUNER-NICAM

- Los puntos de prueba del ajuste (TP) están colocados en el montaje de TUNER-NICAM si no hay otra indicación.

7.8.1 Ajuste de la Sección de Sintonizador

- Los artículos que van a ajustarse aquí dependen de los sistemas locales de estandard de TV. Los sistemas a los que los ajustes necesitan se escriben en la fila respectiva de la tabla.
- Para la señal necesaria de entrada, vea la tabla 7 - 1. Si no se escribe en la tabla, emita las señales al terminal de entrada de antena. Observe la figura 7 - 9 cuando conecta.
- Cuando recibe el otro sistema de TV después del ajuste con el sistema de TV especificado, la condición de la recepción será insuficiente. En este caso, reajuste con el sistema corriente de TV o con el mejor sistema especifi cado en la tabla 7 - 1.
- El ajuste de trampa en la etapa 3 se escribe separadamente en otra tabla. Vea la sección 7.8.2.
- Este modelo está equipado de la función de AFT (Automatic Fine Tuning-Sintonización fina automática).

Tabla 7 - 1

•Los valores mostrados como "fp" en la tabla son los valores de referencia. Ponga a la frecuencia más cerca y al canal que son disponibles en su área.

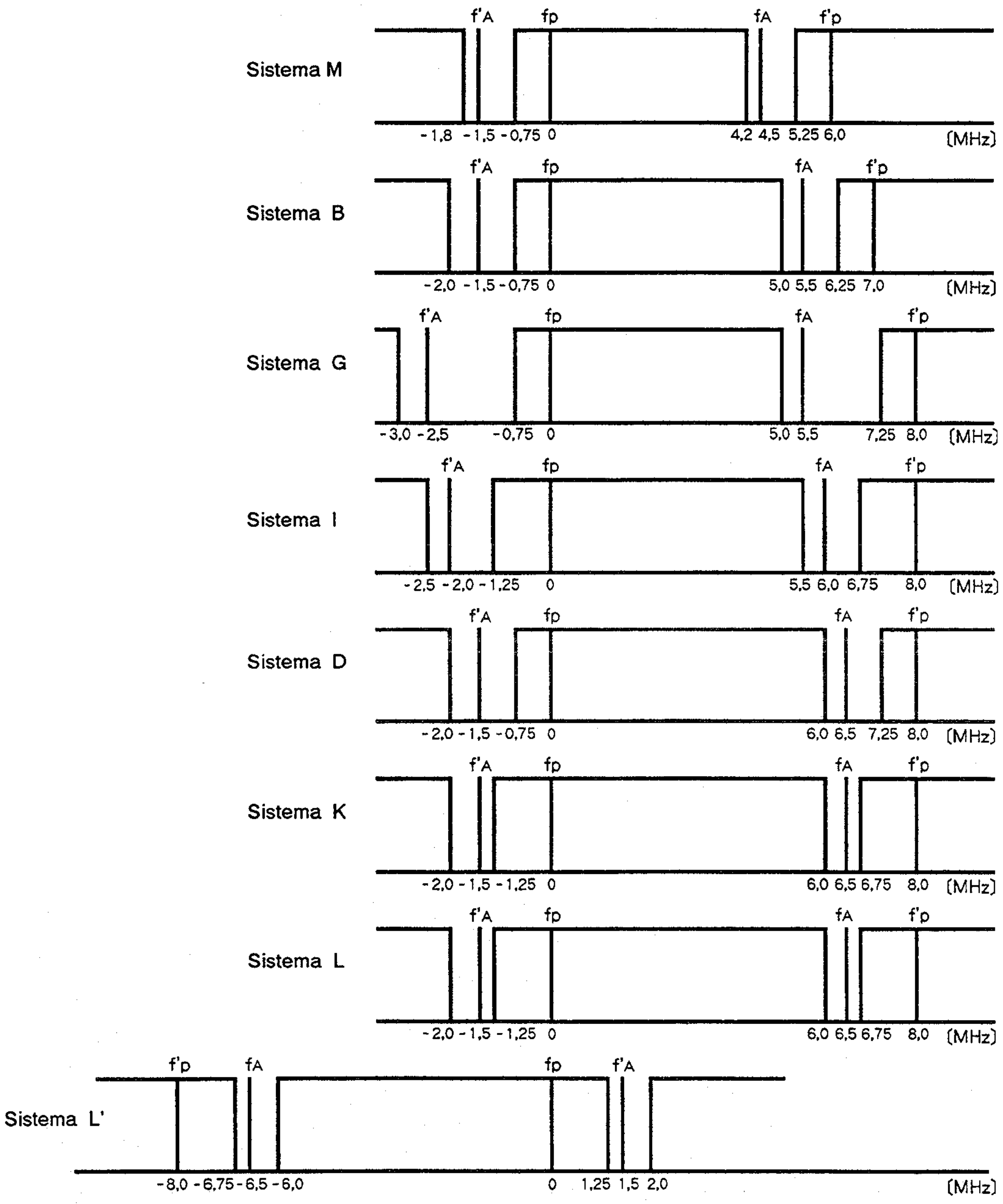
Número de señal	Contentos de señal	Nivel de entrada de antena *2	Puesto del sistema SG *1
①	Señal no modulada de 33,4MHz	90 dB μV	L'
②	Señal no modulada de 39,9MHz	90 dB μV	
③	fp=119,25MHz, Barra de color Audio ; 1kHz, 100% MOD. monoaural	80 dB μV	Cualquiera de M, B, G, I, D, K, L y L' (B y G son las mejores.)
④	fp=196,25MHz, Explosición multiplada Audio ; 1kHz, 100% MOD. monoaural	58 dB μV	Cualquiera de M, B, G, I, D y K (B y G son las mejores.)
⑤	fp=175,25MHz, 100% blanco Audio ; 1kHz, 100% MOD. estéreo	80 dB μV	
⑥	fp=487,25MHz, Barra de color Audio ; 400Hz, 100% MOD. monoaural	80dB μV	L
⑦	fp=55,25MHz, Barra de color Audio ; 1kHz, 100% MOD. ± 25kHz dev, monoaural	80 dB μV	M (US)
⑧	fp=67,25MHz, Trampa de cruz Audio ; 300Hz, 30% MOD. estéreo (solo el canal L)	80 dB μV	
⑨	fp=175,25MHz, 10 etapas Audio ; 5kHz, 30% MOD. estéreo (solo el canal L)	80 dB μV	

*1: Ajuste el sistema SG al sistema local de TV.

*2: Ajuste el nivel de audio de SG a un valor que es más bajo que el de la entrada de antena por el valor que se escribe abajo.
Sistema M : 6dB , Sistema B : 10dB , Sistema G : 10dB , Sistema I : 7dB , Sistema D : 7dB
Sistema K : 7dB , Sistema L : 10dB , Sistema L' : 10dB

Número de etapa	Artículo de ajuste	Sistema al que el ajuste requires	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de L' OSC	L'	Entrada de señal ① a TP-IF IN (P-12)	L16 (T)	Ajuste la frecuencia de TP-TRAP IN (P-23) a 38,9MHz ± 20kHz. (Use el analizador de espectro.)
2	Circuito de equilibrio del circuito de invertidor		Entrada de señal ② a TP-IF IN (P-12)	VR11 (T)	Disminuya el elemento de 39,9 MHz de TP-TRAP IN (P-23). (Use el analizador de espectro.)
3	Ajuste de trampa	Este ajuste depende del sistema local de TV. vea la sección 7.8.2.			
4	Ajuste de LLD de video	M, B/G, I, D/K, L, L'	Señal ③	L22 (T)	Compruebe que la señal de la barra de color está provista de TP-VIDEO (P-17). Si no, ajuste L22 para proveer la barra de color. Disminuya el elemento de señal de color de TP-VIDEO (P-17).
5	Ajuste de AGC *1	M, B/G, I, D/K, L, L'	Señal ④	VR17 (T)	Ajuste la tensión de CC de TP-AGC (P-14) a 6,5V ± 0,3V.
6	Ajuste de nivel de video *1		Señal ⑤	VR13 (T)	Ajuste el nivel de salida de la señal de video en TP-VIDEO (P-17) a 2,2Vp-p ± 0,1V.
7	Ajuste de nivel de SECAM	L, L'	Señal ⑥	VR14 (T)	Ajuste el nivel de detección de video en TP-VIDEO (P-17) a 2,2Vp-p ± 0,2V.
8	Ajuste de VCO	M, B/G, I, D/K	Señal ⑤	L30 (T)	Compruebe que la señal de video (100% blanco) está provista en TP-LOCK (P-20). Si no, ajuste la señal de video.
9				——	Mida la tensión de CC de TP-APC (P-16) cuando TP-IF AGC (P-15) y TP-GND (P-11) están corto-circuitados.
10				L30 (T)	Retenga TP-IF AGC (P-15) y TP-GND (P-11), y mida y ajuste la tensión de CC de TP-APC (P-16) al valor de ± 100 mV con respecto al valor que se obtiene en la etapa 9.
11	Ajuste de distorsión de audio en US	Sistema de M (solamente en US)	Señal ⑦	L32 (T)	Ajuste para disminuir la salida de distorsión de 1kHz de la onda de seno a TP-A/L (P-21: terminal de salida del canal izquierdo).
12	Ajuste de separación de estéreo en US		Señal ⑧	RV03(IC)	Disminuya la salida de TP-A/L (P-21: terminal de salida del canal izquierdo).
			Señal ⑨	RV06(IC)	Disminuya la salida de TP-A/L (P-21: terminal de salida del canal izquierdo).

*1: A1 ajustar AGC y el nivel de video en el área de sistema L o L', use SG de M, B, G, I, D o K (SG de B o G es la mejor). Si no se ajustan apropiadamente estos artículos, saturación blanca, ruido o zumbido pueden ser observados en la pantalla o la pantalla puede ser obscura.


Sistema M
f'A fp fA f'p
-1,8 -1,5 -0,75 0 4,2 4,5 5,25 6,0 (MHz)
Sistema B
f'A fp fA f'p
-2,0 -1,5 -0,75 0 5,0 5,5 6,25 7,0 (MHz)
Sistema G
f'A fp fA f'p
-3,0 -2,5 -0,75 0 5,0 5,5 7,25 8,0 (MHz)
Sistema I
f'A fp fA f'p
-2,5 -2,0 -1,25 0 5,5 6,0 6,75 8,0 (MHz)
Sistema D
f'A fp fA f'p
-2,0 -1,5 -0,75 0 6,0 6,5 7,25 8,0 (MHz)
Sistema K
f'A fp fA f'p
-2,0 -1,5 -1,25 0 6,0 6,5 6,75 8,0 (MHz)
Sistema L
f'A fp fA f'p
-2,0 -1,5 -1,25 0 6,0 6,5 6,75 8,0 (MHz)
Sistema L'
f'p fA fp f'A
-8,0 -6,75 -6,5 -6,0 0 1,25 1,5 2,0 (MHz)

Rota: fp ; Portador de video
fA ; Portador de audio
f'p; Portador de video adyacente superior
f'A;Portador de video adyacente inferior
IF ;38,9(MHz)

Fig. 7 – 8 Relación entre las frecuencias de portador de video y audio en los sistemas de TV

7.8.2 Ajuste de trampa

- Este ajuste se escribe separadamente porque el porcedimiento de ajuste de la sección de sintonizador depende del sistema de estandard de TV.
- Para la señal que se entra, vea la tabla 7-2. Conecte la señal al terminal de entrada de antena.
- Alternadamente ajuste F13 y F19 al puesto óptimo.

Tabla 7 - 2 Señales de entrada

• Use el canal especificado para la señal ①.

Número de señal	Video	Audio	Nivel de entrada de antena	Canal
Señal ①	Barra de color	1kHz, 100% MOD.	80dB μV	Canal libre
Señal ②				Canal próximo alto de la señal ①.
Señal ③				Canal próximo bajo de la señal ①.

Nota:Ajuste el nivel de audio de SG a un valor que es más bajo que el de la entrada de antena por el valor que se escribe abajo.
Sistema M : 6dB , Sistema B : 10dB , Sistema G : 10dB , Sistema I : 7dB , Sistema D : 7dB
Sistema K : 7dB , Sistema L : 10dB , Sistema L' : 10dB

• Para el sistema M

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
3- 1	Ajuste de trampa de video adyacente	Señal ②	F12 (T)	Ajuste el elemento de 32,9MHz de TP- SAW IN (P- 19) al mínimo.
3- 2	Ajuste de trampa de audio	Señal ①	F13, F19 (T)	Ajuste el elemento de 34,4MHz de TP- SAW IN (P- 19) al mínimo.
3- 3	Ajuste de trampa de audio adyacente	Señal ③	F18 (T)	Ajuste el elemento de 40,4MHz de TP- SAW IN (P- 19) al mínimo.

• Para el sistema B

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
3- 1	Ajuste de trampa de video adyacente	Señal ②	F12 (T)	Ajuste el elemento de 31,9 MHz de TP-SAW IN (P- 19) al mínimo.
3- 2	Ajuste de trampa de audio	Señal ①	F13, F19 (T)	Ajuste el elemento de 33,4MHz de TP- SAW IN (P- 19) al mínimo.
3- 3	Ajuste de trampa de audio adyacente	Señal ③	F18 (T)	Ajuste el elemento de 40,4MHz de TP- SAW IN (P19) al mínimo.

• Para el sistema G

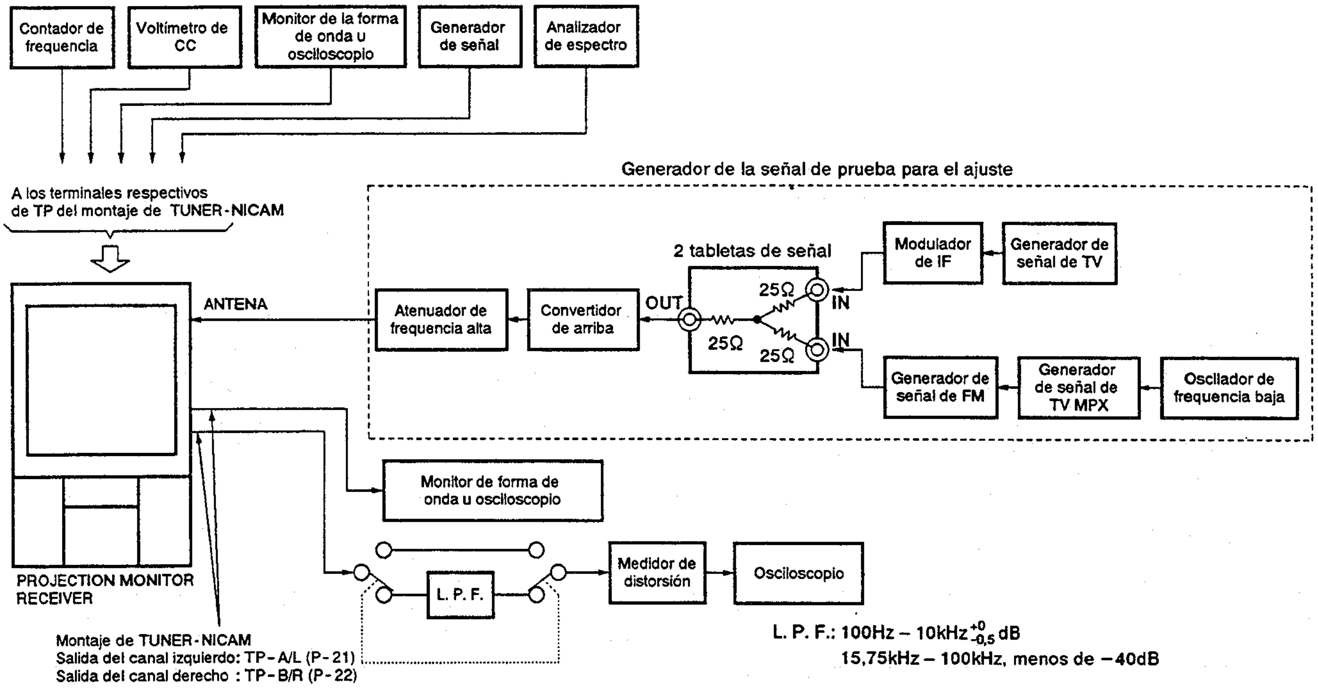
Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
3- 1	Ajuste de F12	——	F12 (T)	Ajuste solamente cuando la imagen no se muestra correctamente.
3- 2	Ajuste de trampa de audio	Señal ①	F13, F19 (T)	Ajuste el elemento de 33,4MHz de TP- SAW IN (P- 19) al mínimo.
3- 3	Ajuste de F18	——	F18 (T)	Ajuste solamente cuando la imagen no se muestra correctamente.

● Para el sistema I

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
3-1	Ajuste de trampa del audio	Señal ①	F12 (T)	Ajuste el elemento de 32,9MHz de TP-SAW IN (P-19) al mínimo.
3-2	Ajuste de F13 y F19	——	F13, F19 (T)	Ajuste solamente cuando la pantalla no se muestra correctamente.
3-3	Ajuste de F18	——	F18 (T)	

● Para el sistema D, K, L o L'

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
3-1	Ajuste de trampa del audio	Señal ①	F12 (T)	Ajuste el elemento de 32,4MHz de TP-SAW IN (P-19) al mínimo.
3-2	Ajuste de F13 y F19	——	F13, F19 (T)	Ajuste solamente cuando la imagen no se muestra correctamente.
3-3	Ajuste de trampa de audio adyacente	Señal ③	F18 (T)	Ajuste el elemento de 40,4MHz de TP-SAW IN (P-19) al mínimo.


Contador de frequencia
Voltímetro de CC
Monitor de la forma de onda u osciloscopio
Generador de señal
Analizador de espectro
A los terminales respectivos de TP del montaje de TUNER-NICAM
Generador de la señal de prueba para el ajuste
2 tabletas de señal
Modulador de IF
Generador de señal de TV
25Ω
25Ω
25Ω
OUT
IN
IN
ANTENA
Atenuador de frequencia alta
Convertidor de arriba
Generador de señal de FM
Generador de señal de TV MPX
Osciliador de frequencia baja
Monitor de forma de onda u osciloscopio
L. P. F.
Medidor de distorsión
Osciloscopio
PROJECTION MONITOR RECEIVER
Montaje de TUNER-NICAM
Salida del canal izquierdo: TP-A/L (P-21)
Salida del canal derecho : TP-B/R (P-22)

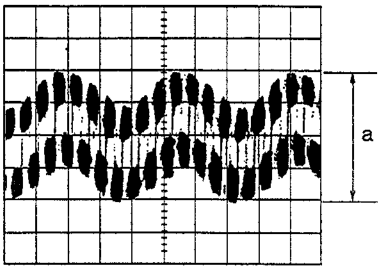
L. P. F.: 100Hz – 10kHz$^{+0}_{-0,5}$dB
15,75kHz – 100kHz, menos de −40dB

Fig. 7-9 Diagrama de conexión cuando se ajusta la sección del sintonizador

7.8.3 Ajuste de la sección de NICAM

- Este ajuste es necesario en el área de audio múltiplex de B/G CCIR.
- Ejecute este ajuste después de 7.8.1 Ajuste de la sección de sintonizador y 7.8.2 Ajuste de trampa.

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de estéreo de CCIR FM	Señal libre de B/G CCIR audio múltiplex (STEREO o DUAL)	F201 (T)	Conecte un osciloscopio al alfiler 8 de IC202 y observe la forma de onda (figura 7-10). Ajuste el amplitud (figura 7-10 a) de la forma de onda al máximo.



H : 5 µsec/div. , V : 100 mV/div.

Fig. 7-10 Forma de onda del alfiler 8 de IC202

Ajuste " a " al máximo.

Nota:
Si no se ajusta apropiadamente, una forma de onda se mostrará cuyo amplitud es más pequeño y más plano que la onda mostrada en la figura 7-10.

7.9 CUANDO SE REEMPLAZA EL MONTAJE DE TUNER-NICAM

- Se requiere no ajuste.

7.10 CUANDO SE REMEDIA EL MONTAJE DE AM-DEMOD

- Este ajuste es necesario solamente para el sistema L o L'.
- Los puntos de prueba para el ajuste (TP) están colocados en el montaje de AM-DEMOD.

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de detección de AM	Alimente un canal del sistema L o L' al terminal de entrada de antena. La señal de audio debe ser de 1kHz, 50% MOD. AM, cuando no se requiere la señal de video.	L1018 (A)	Ajuste para que la onda de seno de 1kHz se salga desde el alfiler 5 de IC1012 con la mínima distorsión y con el nivel máximo.
2	Ajuste de nivel de audio		VR1012 (A)	Ajuste para que el nivel de la onda de seno de 1kHz que se sale desde el alfiler 5 de CN1016 sea de 200mVrms ± 50mV.

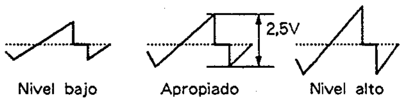
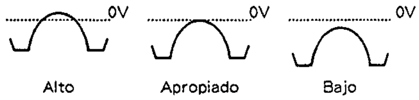
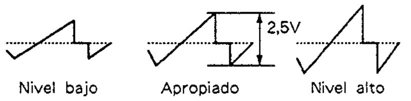
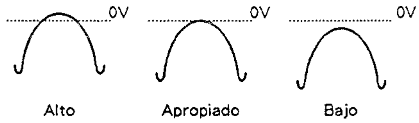
7.11 CUANDO SE REEMPLAZA EL MONTAJE DE AM-DEMOD

- Se requiere no ajuste.

7.12 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE CONVERGENCE

7.12.1 AJUSTE DEL NIVEL PICO DE LA FORMA DE ONDA DE PARABOLA

- Los puntos de prueba para el ajuste (TP) están colocados en el montaje de CONVERGENCE.
- Ejecute este ajuste solamente cuando se mueve la convergencia.

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	H SAWTOOTH WAVEFORM LEVEL	VR701 (C)	En TP-H.NOKO (P-805), ajuste el nivel pico de salida de la forma de onda a 2,5V p-p. 
2	TOP LEVEL OF H PARABOLA WAVRFORM	VR750 (C)	En TP-H.PARA (P-802), ajuste el nivel pico de salida de la forma de onda a 0V ± 20mV. 
3	V SAWTOOTH WAVEFORM LEVEL	VR702 (C)	A TP-V.NOKO (P-803), ajuste el nivel pico de salida de la forma de onda a 2,5Vp-p. 
4	TOP LEVEL OF V PARABOLA WAVEFORM	VR749(C)	En TP-V.PARA (P-801), ajuste el nivel pico de salida de la forma de onda a 0V ± 20mV. 

7.12.2 AJUSTE DE CONVERGENCIA

- Movimiento de la pantalla y los puntos de ajuste se escriben sumariamente en las figuras 7-14 y 7-15.
- Señal de entrada es la señal de trampa de cruz para PAL.
- Ejecute el ajuste de posición con las teclas de control remoto como sigue. (Refiérase a la figura 7-11.)
- Después de ejecutar todos los ajustes, retenga el cortocircuito para obtener la pantalla blanca y ejecute el ajuste anterior.
- Correcte la línea vertical con la señal horizontal para la corrección y correcte la línea horizontal con la señal vertical para la corrección.
- Los puntos de ajuste están colocados en el montaje de CONVERGENCE.

※1: Pantalla de ajuste de convergencia y la manera como manejar

Ⓐ : Cada vez que presione el interruptor de la sección del control frontal, la pantalla cambia desde ② a ⑨.
Ⓑ : Para cambiar desde ADJ ↓ ↑ a ADJ ←→, presione la tecla 4 o 6 del cotnrol remoto.
Ⓑ' : Para cambiar desde AJD ←→ a ADJ ↓ ↑, presione la tecla 2 o 8 del control remoto.
Ⓒ : Con la pantalla ADJ ↓ ↑ el mostrador se cambia desde ③, ⑤, ⑦ a ⑨ cuando presiona la tecla 5 del control remoto.
Ⓒ' : Con la pantalla ADJ ←→, el mostrador cambia desde ②, ④, ⑥ a ⑧ cuando presiona la tecla 5 del control remoto.

Ajuste de rojo horizontal : Con la pantalla ② o ⑥, presione 2 (superior) o 8 (inferior) de las teclas del control remoto o el interruptor SELECT/ADJ de la unidad principal.
Ajuste de rojo vertical : Con la pantalla ③ o ⑦, presione la tecla 4 (izquierda) o 6 (derecha) del control remoto o el interruptor SELECT/ADJ de la unidad principal.
Ajuste de azul horizontal : Con la pantalla ④ o ⑧, presione la tecla 2 (superior) o 8 (inferior) del control remoto o el interruptor SELECT/ADJ de la unidad principal.
Ajuste de azul vertical : Con la pantalla ⑤ o ⑨, presione la tecla 4 (izquierda) o 6 (derecha) del control remoto o el interruptor SELECT/ADJ de la unidad principal.

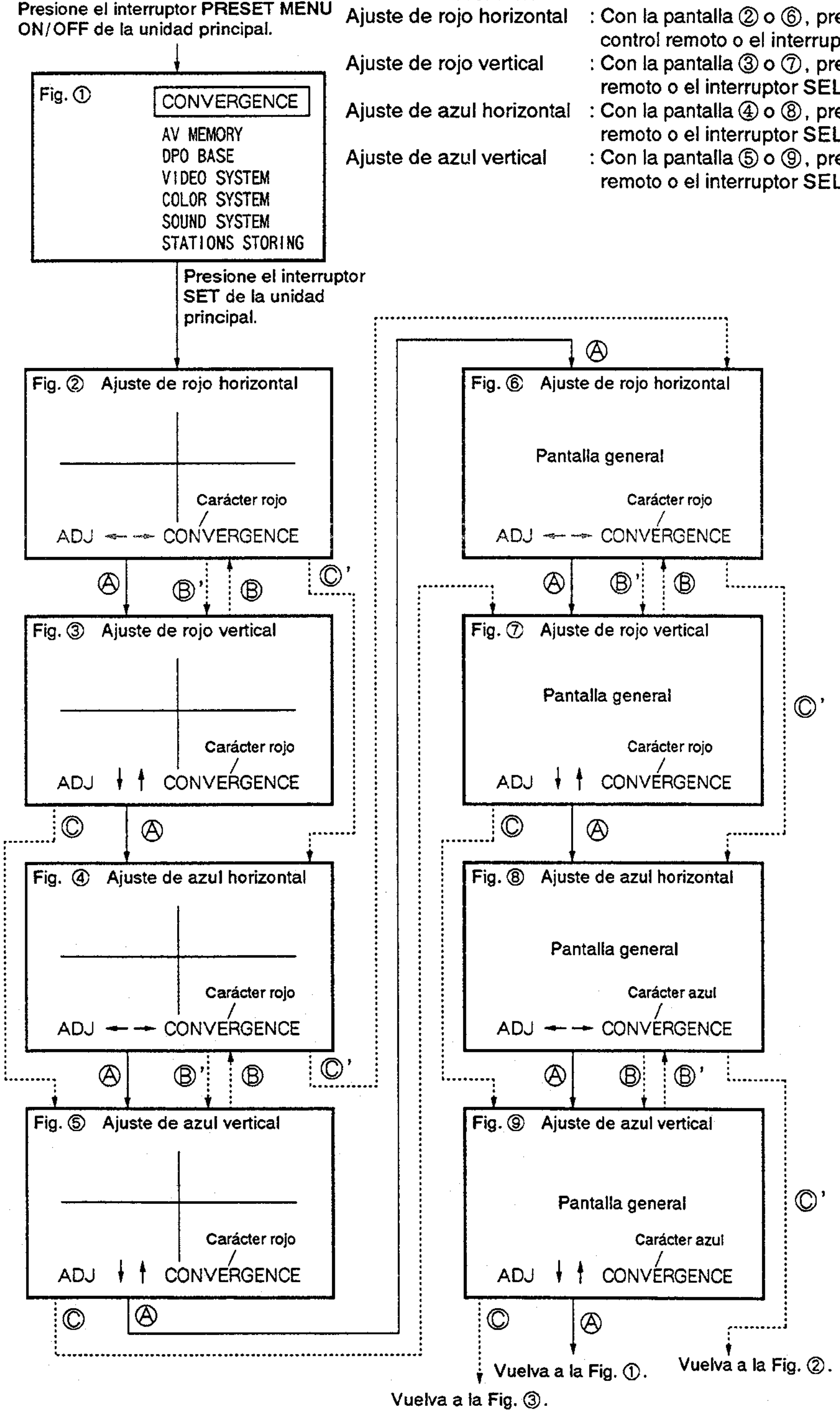

Presione el interruptor PRESET MENU ON/OFF de la unidad principal.
Fig. ①
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
Presione el interruptor SET de la unidad principal.
Fig. ② Ajuste de rojo horizontal
Carácter rojo
ADJ ←→ CONVERGENCE
Fig. ③ Ajuste de rojo vertical
Carácter rojo
ADJ ↓↑ CONVERGENCE
Fig. ④ Ajuste de azul horizontal
Carácter rojo
ADJ ←→ CONVERGENCE
Fig. ⑤ Ajuste de azul vertical
Carácter rojo
ADJ ↓↑ CONVERGENCE
Fig. ⑥ Ajuste de rojo horizontal
Pantalla general
Carácter rojo
ADJ ←→ CONVERGENCE
Fig. ⑦ Ajuste de rojo vertical
Pantalla general
Carácter rojo
ADJ ↓↑ CONVERGENCE
Fig. ⑧ Ajuste de azul horizontal
Pantalla general
Carácter azul
ADJ ←→ CONVERGENCE
Fig. ⑨ Ajuste de azul vertical
Pantalla general
Carácter azul
ADJ ↓↑ CONVERGENCE
Ⓐ
Ⓑ
Ⓑ'
Ⓒ
Ⓒ'
Vuelva a la Fig. ①.
Vuelva a la Fig. ②.
Vuelva a la Fig. ③.

Fig. 7-11 Funcionamiento de las teclas en la pantalla de convergencia

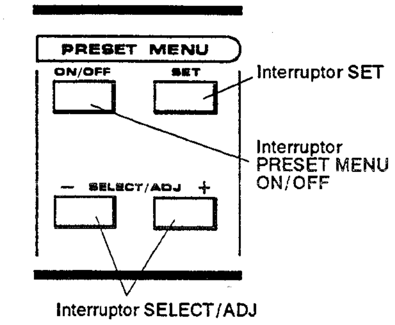

PRESET MENU
ON/OFF
SET
Interruptor SET
Interruptor PRESET MENU ON/OFF
− SELECT/ADJ +
Interruptor SELECT/ADJ

Fig. 7-12 Disposición de las teclas de la unidad principal

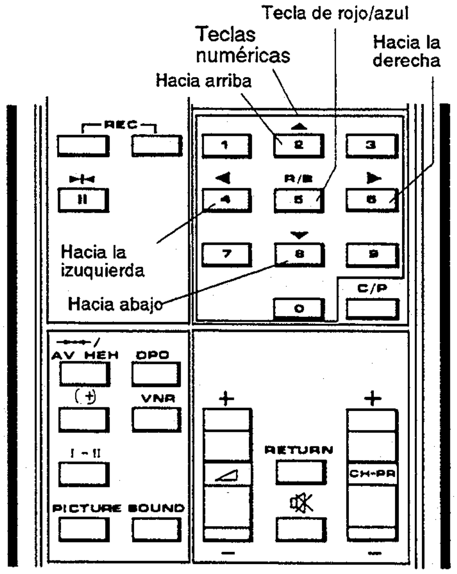

Tecla de rojo/azul
Teclas numéricas
Hacia la derecha
Hacia arriba
REC
1
2
3
R/B
4
5
6
7
8
9
0
C/P
Hacia la izquierda
Hacia abajo
AV MEM
DPO
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
−

Fig.7-13
Disposición de las teclas del control remoto

(1) AJUSTE DE LA LINEA VERDE

- Porque las líneas verdes se usan como una referencia cuando se ajustan rojo y azul, asegúrese de ajustar adecua damente.
- Corto-circuite TP - R (TP - 375), TP - B (TP - 374) y TP - GND (TP - 377) en el montaje VIDEO - AUDIO, y después, se aparecen las líneas verdes. Retenga el corto-circuito después del ajuste de la línea verde.

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	GH - PIN	VR705 (C)	Ajuste la línea verde a la línea recta. (Refiérase a las figuras 7 - 14 y 7 - 15.)
2	GH - KEY	VR704 (C)	
3	GV - SKEW	VR706 (C)	
4	GV - BOW	VR707 (C)	
5	GV - KEY	VR708 (C)	
6	GV - S - KEY	VR709 (C)	
7	GV - PIN	VR710 (C)	
8	Repita las etapas 1 a 7 hasta que se obtenga la mejor pantalla que posible.		

(2) AJUSTE DE LA LINEA ROJA

- Corto-circuite TP-B (TP-374) y TP-GND (TP-377) en el montaje VIDEO-AUDIO, y despés las líneas verdes y las líneas rojas se aparecen en la pantalla. Retenga el corto-circuito después del ajuste de la línea roja.
- Ajuste cada VR para que las líneas rojas se converjan con las líneas verdes para obtener las líneas amarillas.
- Después del ajuste, ejecute el ajuste fino mientras observando la toda pantalla.

● Ajuste de compensación de la distorsión rojo horizontal

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	RH-SKEW	VR711 (C)	Ajuste las líneas rojas, verticales en el centro de la pantalla sin distorsión ni inclinación. (Refiérase a la figura 7-14.)
2	RH-BOW	VR712 (C)	
3	Repita las etapas 1 y 2.		
4	RH-KEY	VR713 (C)	Ajuste las líneas rojas verticales en las secciones derecha e izquierda de la pantalla a las líneas rectas sin inclinación. (Refiérase a la figura 7-14.)
5	RH-S-KEY	VR714 (C)	
6	Repita las etapas 4 y 5.		
7	RH-PIN	VR715 (C)	Ajuste las líneas rojas verticales en las secciones derecha e izquierda de la pantalla a las líneas rectas sin distorsión. (Refiérase a la figura 7-14.)
8	RH-S-PIN	VR716 (C)	
9	Repita las etapas 7 y 8 o las etapas 1 a 8.		

● Ajuste de compensación del intervalo de rojo horizontal

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	RH-POSITION	Teclas 4 y 6 del contol remoto	Ajuste para que las líneas rojas verticales se converjan con las líneas verdes verticales en el centro de la pantal la para obtener las líneas amarillas. (Esto se sirve como un ajuste de referencia, pero si las líneas se divergen durange el ajuste, ejecute el ajuste después de considerar esta divergencia.)
2	RH-LIN	VR717 (C)	Ajuste para que las líneas rojas verticales converjan con las líneas verdes en las secciones derecha e izquierda de la pantalla para obtener las líneas amarillas. (Refiérase a la figura 7-14.)
3	RH-4-LIN	VR720 (C)	
4	RH-S-LIN	VR718 (C)	
5	RH-SIZE	VR719 (C)	
6	Repita las etapas 1 a 5.		

● Ajuste de compensación de la distorsión de rojo vertical

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	RV-SKEW	VR721 (C)	Ajuste las líneas rojas horizontales en el centro de la pantalla a las líneas rectas sin distorsión ni inclinación. (Refiérase a la figura 7-15.)
2	RV-BOW	VR722 (C)	
3	Repita las etapas 1 y 2.		
4	RV-KEY	VR723 (C)	Ajuste las líneas rojas horizontales en las secciones inferior y superior de la pantalla convergen a las líneas rectas sin inclinación. (Refiérase a la figura 7-15.)
5	RV-S-	VR724 (C)	
6	RV-S-PIN	VR726 (C)	
7	RV-PIN	VR725 (C)	
8	Repita las etapas 4 a 7 o las etapas 1 a 7.		

● Ajuste de compensación del intervalo de rojo vertical

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	RV-LIN	VR727 (C)	Ajuste para que las líneas rojas horizontales se converjan a las líneas verdes horizontales en el centro de la pantalla para obtener las líneas amarillas. (Este se sirve como un ajuste de referencia, pero si las líneas divergen durante el ajuste, ejecute el ajuste después de considerar esta divergencia.) (Refiérase a la figura 7-15.)
2	RV-S-LIN	VR729 (C)	
3	RV-POSITION	Las teclas 2 y 8 del control remoto.	
4	RV-SIZE	VR728 (C)	Ajuste para que las líneas rojas horizontales se converjan a las líneas verdes horizontales en las secciones inferior y superior de la pantalla para obtener las líneas amarillas. (Refiérase a la figura 7-15.)
5	Repita las etapas 1 a 4.		

(3) AJUSTE DE LA LINEA AZUL

- Corto-circuite TP-R (TP-375) y TP-GND (TP-377) en el montaje de VIDEO-AUDIO, y después, las líneas verdes y azules se aparecen en la pantalla. Retenga el corto-circuito después del ajuste de las líneas azules.
- Ajuste cada VR para que las líneas azules se converjan con las líneas verdes para obtener las líneas ciánicas.
- Después del ajuste, ejecute el ajuste fino mientras observando la toda pantalla.

• Ajuste de compensación de la distorsión de azul horizontal

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	BH-SKEW	VR730 (C)	Observe las líneas azules verticales en la pantalla, y ajuste de la misma manera que el ajuste de compensación de la distorsión de rojo horizontal.
2	BH-BOW	VR731 (C)	
3	BH-KEY	VR732 (C)	
4	BH-S-KEY	VR733 (C)	
5	BH-PIN	VR734 (C)	
6	BH-S-PIN	VR735 (C)	

• Ajuste de compensación del intervalo de azul horizontal

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	BH-POSITION	Las teclas 4 y 6 del control	Ajuste para que las líneas azules se converjan con las líneas verdes para obtener las líneas ciánicas de la misma manera que el ajuste de compensación del intervalo de rojo horizontal.
2	BH-LIN	VR736 (C)	
3	BH-4-LIN	VR739 (C)	
4	BH-S-LIN	VR737 (C)	
5	BH-SIZE	VR738 (C)	

• Ajuste de compensación de la distorsión de azul vertical

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	BV-SKEW	VR740 (C)	Observe las líneas azules horizontales en la pantalla, y ajuste de la misma manera que el ajuste de compensación de la distorsión de rojo vertical.
2	BV-BOW	VR741 (C)	
3	BV-KEY	VR742 (C)	
4	BV-S-KEY	VR743 (C)	
5	BV-S-PIN	VR745 (C)	
6	BV-PIN	VR744 (C)	

• Ajuste de compensación del intervalo de azul vertical

Número de etapa	Artículo de ajuste	Punto de ajuste	Procedimiento de ajuste
1	BV-LIN	VR746 (C)	Ajuste para que las líneas azules se converjan con las líneas verdes para obtener las líneas ciánicas de la misma manera que el ajsute de compensación del invervalo de rojo vertical.
2	BV-S-LIN	VR748 (C)	
3	BV-POSITION	Teclas 2 y 8 del control remoto	
4	BV-SIZE	VR747 (C)	

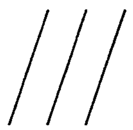
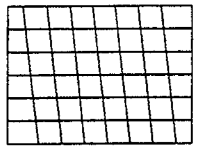
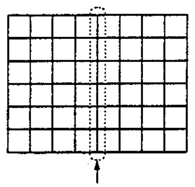
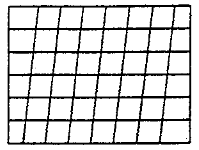
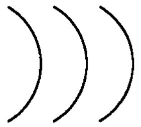
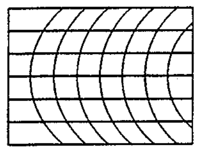
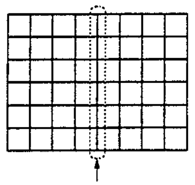
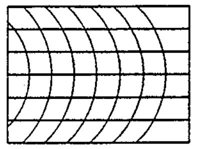
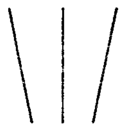
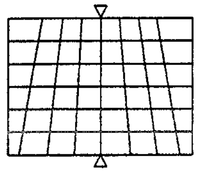
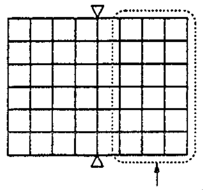
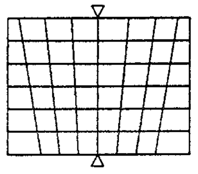
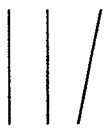
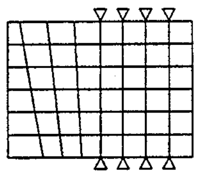
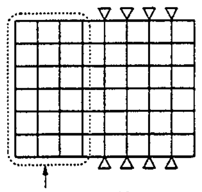
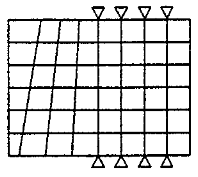
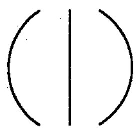
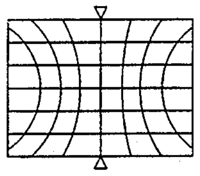
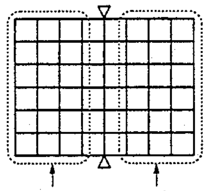
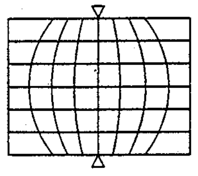
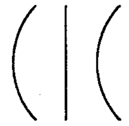
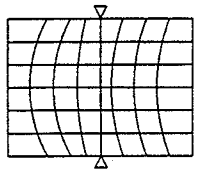
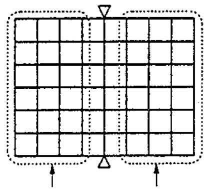
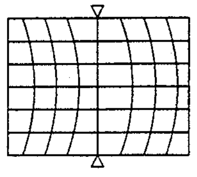
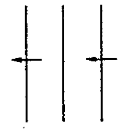
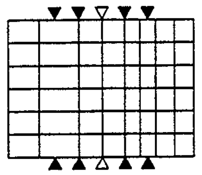
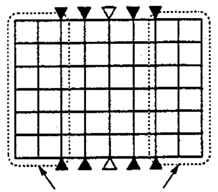
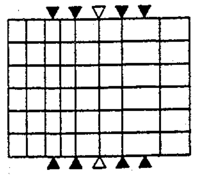
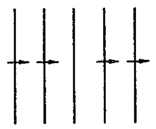
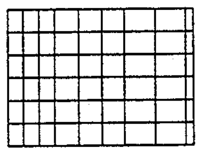
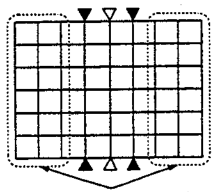
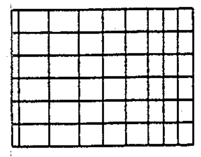
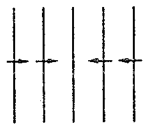
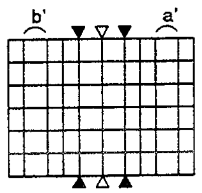
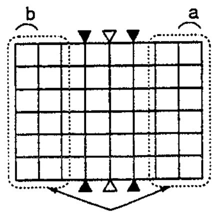
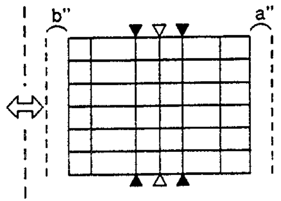
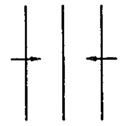
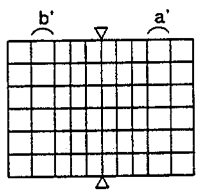
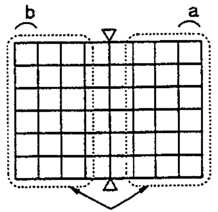
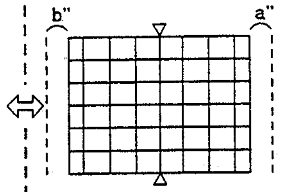
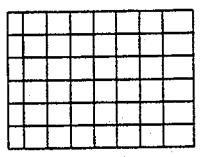
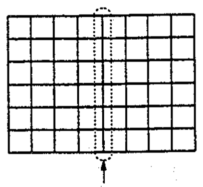
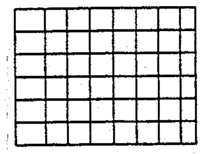
Compensación	Señal y marca *1	Pantalla distorsionada	Pantalla correctada	Pantalla distorsionada	Punto de ajuste	
Compensación de distorsión horizontal	H-SKEW 		 Punto de atención		Observe las líneas verticales en el centro de la pantalla (donde no hay movimiento de H-KEY, H-S-KEY, H-PIN ni H-S-PIN), y después ajuste las líneas verticales para eliminar las líneas inclinadas.	Para obtener las mejores líneas posibles, ajuste las líneas verticales en el centro de la pantalla seguiendo el procedimiento de ajuste para H-SKEW y H-BOW.
	H-BOW 		 Punto de atención		Observe las líneas verticales en el centro de la pantalla, y después ajuste las líneas torcidas a las líneas rectas.	
	H-KEY 		 Punto de atención		Observe las líneas verticales en la porción derecha de la pantalla (donde no hay movimiento de H-S-KEY), y después ajuste las líneas verticales para eliminar las líneas inclinadas.	Para eliminar las líneas inclinadas , ajuste las líneas verticales en las secciones derecha e izquierda de la pantalla seguiendo el procedimiento de ajuste para H-KEY y H-S-KEY.
	H-S-KEY 		 Punto de atención		Observe las líneas verticales en la porción izquierda de la pantalla, y después ajuste las líneas verticales para eliminar las líneas inclinadas.	
	H-PIN 		 Punto de atención		Observe las líneas verticales en las secciones derecha e izquierda de la pantalla, y después ajuste las líneas torcidas para simetrizar derecha e izquierda por H-S-PIN. Después ajuste las líneas verticales torcidas en las secciones derecha e izquierda en la pantalla para recticar las por H-PIN.	Para eliminar la distorsión, rectifique las líneas verticales en las secciones derecha e izquierda de la pantalla seguiendo el procedimiento de ajuste de H-PIN y H-S-PIN.
	H-S-PIN 		 Punto de atención			

Fig. 7-14 Compensaión horizontal

Compensación	Señal y marca *1	Pantalla distorsionada	Pantalla correctada	Pantalla distorsionada	Punto de ajuste	
Compensación del intervalo horizontal	H-LIN 		 Punto de atención		Sigue el procedimiento de ajuste de H-LIN, H-4-LIN y H-S-LIN (acuerde el grado de movimiento de H-SIZE) para el intervalo de las líneas verticales en la porción derecha de la pantalla sea el mismo que de las líneas en la porción izquierda, con el punto central que no mueva. Por ejemplo, cuando las líneas verticales en la porción derecha se mueven en la dirección derecha, deslice las líneas verticales en la porción izquierda con el mismo grado del intervalo en la dirección hacia la izquierda.	Las líneas verticales en el centro de la pantalla convergen a las líneas verdes por H-POSITION. Y también, las líneas verticales en las secciones derecha e izquierda de la pantalla convergen a las líneas verdes por H-LIN, H-4- LIN, H-S-LIN y H-SIZE.
	H-4-LIN 		 Punto de atención			
	H-S-LIN 	 a = a', b = b'	 Punto de atención	 a = a'', b = b''		
	H-SIZE 	 a > a', b > b'	 Punto de atención	 a < a'', b < b''	Converja las líneas verticales en las secciones de derecha e izquierda de la pantalla a las líneas verdes.	
	H-POSITION		 Centro de la pantalla		Las líneas verticales de la pantalla mueven en la dirección paralela hacia la derecha e izquierda con el control de convergencia del control remoto o de la unidad principal. Cuando se mueven las líneas verticales libremente, considere el grado del movimiento.	

Nota: KEY es la abreviación de KEYSTONE,
y LIN es la abreviación de LINEARITY
▽: muestra los puntos que no se mueven.
▼: muestra los puntos que apenas se mueven.
*1:Sketch is printed on the p.c. board.

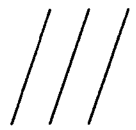
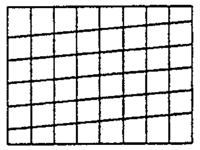
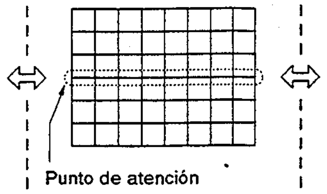
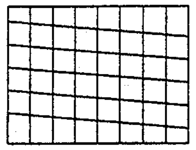
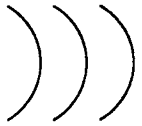
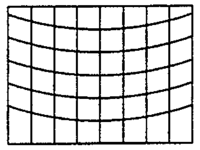
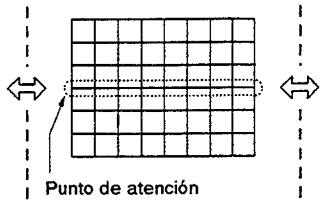
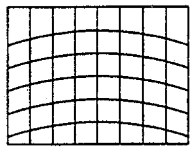
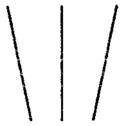
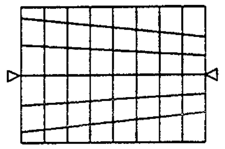
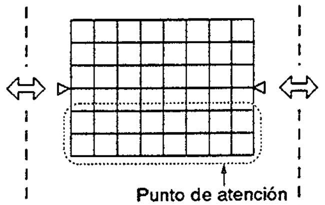
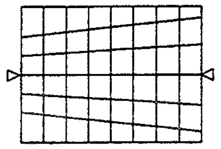
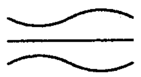
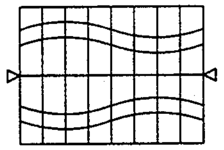
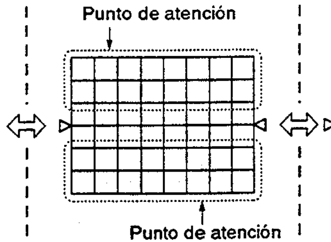
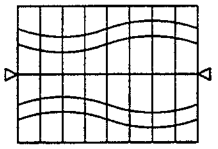
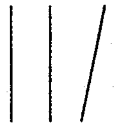
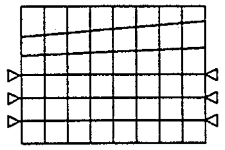
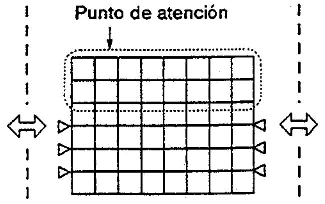
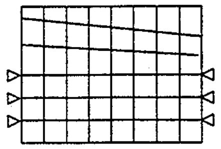
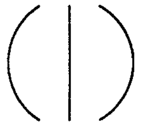
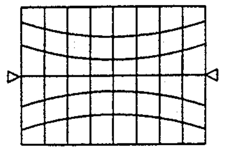
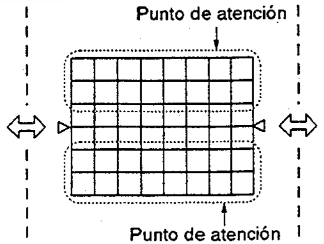
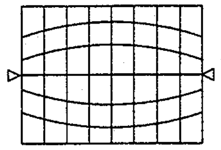
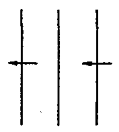
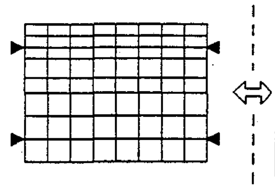
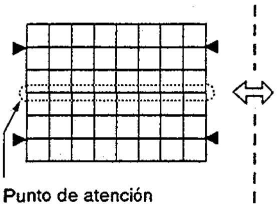
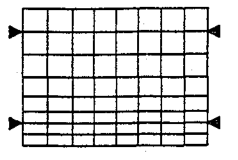
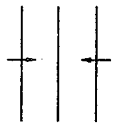
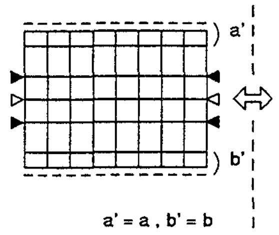
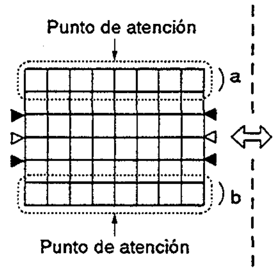
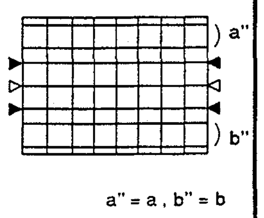
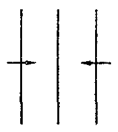
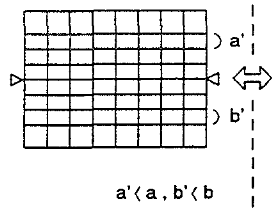
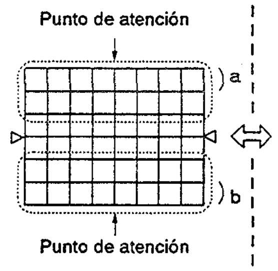
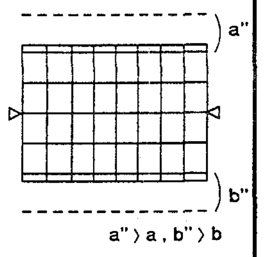
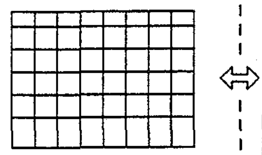
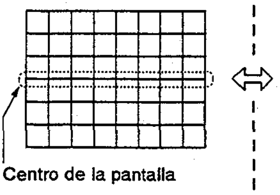
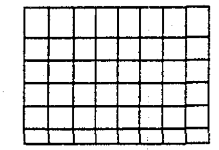
Compensación	Señal y marca *1	Pantalla distorsionada	Pantalla correctada	Pantalla distorsionada	Punto de ajuste	
Compensación de distorsión vertical	V-SKEW 				Observe las líneas horizontales en el centro de la pantalla (donde no hay movimiento de V-KEY, V-SKEY ni V- PIN), y después ajuste las líneas horizontales para eliminar las líneas inclinadas.	Para obtener las mejores líneas posibles, ajuste las líneas horizontales en el centro de la pantalla seguiendo el procedimiento de ajuste de V-SKEW y V-BOW.
	V-BOW 				Observe las líneas horizontales en el centro de la pantalla, y después ajuste las líneas torcidas a las líneas rectas.	
	V-KEY 				Observe las líneas horizontales en la sección inferior de la pantalla (donde no hay el movimiento de V-S-KEY), y después ajuste las líneas horizontales para eliminar las líneas inclinadas.	Para eliminar las líneas inclinadas, ajuste las líneas horizontales en las secciones superior e inferior de la pantalla seguiendo el procedimiento de ajuste de V-KEY, V-S-PIN y V-S-KEY.
	V-S-PIN 				Observe las líneas horizontales en las secciones superior e inferior, y después ajuste las líneas torcidas a las líneas rectas.	
	V-S-KEY 				Observe las líneas horizontales en la sección superior de la pantalla, y después ajuste las líneas horizontales para eliminar las líneas inclinadas.	
	V-PIN 				Observe las líneas horizontales en las secciones superior e inferior de la pantalla, y después ajuste las líneas torcidas a las líneas rectas.	Para eliminar la distorsión, enderezca las líneas en las secciones seperior e inferior de la pantalla seguiendo el procedimiento de ajuste de V-PIN.

Fig. 7-15 Compensación vertical

Compensación	Señal y marca	Pantalla distorsionada	Pantalla correctada	Pantalla distorsionada	Punto de ajuste	
Compensación del intervalo vertical	V-LIN 		 Punto de atención		Converjan las líneas horizontales en el centro de la pantalla a las líneas verdes. En este momento, asegúrese de dejar mismo espacio de las líneas horizontales hacia la sección supeior y hacia la sección inferior desde el punto central. Sin embargo, cuando el mismo intervalo no se puede obtener, ajuste POSITION, V-LIN y V-S-LIN otra vez.	Las líneas horizontales en el centro de la pàntalla se convergen a las líneas verdes con V-LIN, V-S-LIN y V-POSITION. Y también, las líneas horizontales en las secciones superior e inferior de la pantalla se convergen a las líneas verdes con V-SIZE.
	V-S-LIN 		 Punto de atención a b Punto de atención			
	V-SIZE 		 Punto de atención a b Punto de atención		Converjan las líneas horizontales en las secciones superior e inferior de la pantalla a las líneas verdes.	
	V-POSITION		 Centro de la pantalla		Las líneas horizontales de la pantalla se mueven en la dirección parallola en la pantalla superior e inferior con el control de convergencia del control remoto o de la unidad principal. Cuando las líneas horizontales se mueven libremente, considere el grado de movimiento.	

Nota: KEY es la abreviación de KEYSTONE, y LIN es la abreviación de LINEARITY.
▽: muestra los puntos que no se mueben.
▼: muestra los puntos que apenas se mueven.

7.13 CUANDO SE REMEDIA EL MONTAJE DE MICROCOMPUTER

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Al reemplazar IC307 (X24C08P) en el montaje de microcomputer, el estandard de PIONEER, la base de DPO y la posición de convergencia se ajustan en el centro de las gamas variables. Reajústelos de acuerdo con los procedimientos de ajuste especificados. Los ajustes por un cliente se ejectuará a su referencia.			
2	Ajuste de la posición de la carácter "Telop".	Señal libre de video	VR301 (M)	Emita la señal de prueba de cruz, y coloque la cruz en el centro de la pantalla.

7.14 CUANDO SE REEMPLAZA EL MONTAJE DE MICROCOMPUTER

- Ajuste la posición de la carácter "Telop" como se ve en la sección 7.13 y ejecute el ajuste por un cliente.

7.15 CUANDO SE REMEDIA EL MONTAJE DE I/O-TEXT

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de entrada de 13,5MHz VCO	No entrada de señal	L605 (I)	Ajuste la frecuencia de oscilación al alfiler 17 de IC602 en el montaje de I/O-TEXT a 13,5MHz ± 100kHz.

7.16 CUANDO SE REEMPLAZA EL MONTAJE DE I/O-TEXT

- Se requiere no ajuste.

7.17 CUANDO SE REMEDIA EL MONTAJE DE DPO

- Ajuste la sensitividad de DPO como se escribe en la sección 7.26.

7.18 CUANDO SE REEMPLAZA EL MONTAJE DE DPO

- Se requiere no ajuste.

7.19 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE DYNAMIC FOCUS

- Compruebe el foco (cuatro esquinas de la pantalla). Si el foco no está apropiado, ajuste VR1 al mejor estado.

7.20 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE HIGH VOLTAGE CONTROL

- Compruebe H. SIZE, V. SIZE y convergencia si es necesario.

7.21 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE R, G O B CRT DRIVE

- El equilibro de blanco provee la mejor pantalla. Si no, ajuste el equilibrio de blanco como sigue.

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Ajuste de equilibrio de blanco	Radiodifusión ordinaria	Pantalla (VR1) (R) (B)	Ajuste el blanco cuando no se obtiene el ajuste apropiado. Ponga COLOR del control remoto al mínimo, ajuste la pantalla de VR.

7.22 CUANDO SE REEMPLAZA EL MONTAJE DE CRT DE R, G O B

- El procedimiento de reemplazo del montaje de CRT de R, G o B se escribe en la sección "8. Reemplazo del montaje de CRT".
- Cuando uno o dos tubos se reemplazan, ajuste los nuevos tubos de acuerdo con los tubos anteriores.
  Si todos los tres tubos se reemplazan, primero ajuste G, y después ajuste otros dos tubos con el tubo G.

Número de etapa	Artículo de ajuste	Señal de entrada	Punto de ajuste	Procedimiento de ajuste
1	Angulo de yugo de desviación y el ajuste de centrado	Señal de cruz (o la señal de cruz para la prueba de convergencia: refiérase a la figura 7-13.)	Imán de centrado del yugo de desviación del montaje de CRT reemplazado (refiérase a la figura 7-19.)	Ajuste el ángulo del yugo de desviación hasta que la cruz de color del montaje de CRT reemplazado sea paralelo con la cruz del color del montaje de CRT que no se ha reemplazado. Reajuste la posición de convergencia (mientras por manejando CNT-a-MAX (MIN)-a-CNT en el modo de FACTORY ADJ) cuando se reemplaza el montaje rojo o azul. Ajuste el imán de centrado del yugo de desviación en el montaje de CRT reemplazado hasta que la cruz converja.
2	Ajuste de foco	Trampa de cruz	El foco de VR reemplazado de color (VR1) y el montaje de lente conectado al montaje reemplazado de CRT (refiérase a la figura 7.20 y la figura 7-21.)	Ajuste el foco del montaje del CRT reemplazado al estado óptimo. (Si se cambia la posición de convergencia, será más fácil de observar. Vuélvala sin falta a su posición original después del ajuste.)
3	Ajuste de convergencia		Ajuste la convergencia de color del montaje de CRT reemplazado de acuerdo con el color de un montaje que no se ha reemplazado. Vea la sección 7.12.2 AJUSTE DE LA CONVERGENCE para los detalles del procedimiento. (Cuando se reemplaza el montaje G de CRT, ajuste la convergencia de color de R, G y B.)	
4	Equilibrio de blanco	Señal de barra de color sin la señal de color	Pantalla VR(VR1) VR651 (R) VR653 (B) } VR(V) Carretera	Ajuste la calidad de pantalla al estandard con el control remoto. Ajuste la pantalla de VR de color reemplazada hasta que el color gris se aparezca en el área obscura del color. Ajuste la carretera VR de color reemplazada hasta que el color en el área brillante sea blanco. 〔Cuando se reemplaza el montaje G de CRT, ajuste un poco la carretera VR (R) y (B).〕 Ajuste el estandard PIONEER de brillo solamente cuando los ajustes escritos arriba no funcionan bien por causa del brillo anormal.
5	Ajuste de estandard de PIONEER	Ajuste como se escribe en las etapas 8 a 14 en la sección 7.6.1.		

7.23 CUANDO SE REEMPLAZA EL MONTAJE DE LENTE

- Remueva la lámina lenticular, y sujete el papel de dibujo con una cinta plástica en su lugar. (Refiérase a la figura 7-20.) Ajuste el foco de lente del montaje que se monta recientemente, observando la pantalla mostrada en el papel de dibujo.

7.24 CUANDO SE REMEDIAN O SE REEMPLAZAN OTROS MONTAJES

- Se requiere no ajuste.

7.25 AJUSTE DE BASE DE DPO

El funcionamiento de DPO es para juzgar el nivel de la luz externa, y se funciona cuando el interruptor DPO (S859) está puesto en ON, ajustando la calidad de la pantalla (contraste, color, brillo) del PROJECTION MONITOR RECEIVER de acuerdo con la luz externa.

Hay dos clases en la calidad de la pantalla. Cuando está brillante, la calidad primera de DPO (DPO LIGHT) se selecciona. Cuando está obscuro, la calidad segunda de DPO (DPO DARK) se selecciona. Los datos sobre estos dos clases de la calidad están memorizados en IC307 (la memoria no-volátil).

Por eso, cuando IC307 (o los circuitos periféricos) se remedian o se reemplazan, o cuando el montaje de microcomputador se reemplaza, la calidad de la pantalla debe ser memorizada en IC307 otra vez.

Para memorizar el dato de la calidad de la pantalla DPO, refiérase a los manuales de instrucciones. Los valores ajustados en la fábrica se muestran aquí para la referencia. Los valores están sujetos a cambio.

- DPO LIGHT
  - ❂ (COLOR) : 0
  - ◑ (CONTRAST) : 0
  - ☼ (BRIGHT) : 0
- DPO DARK
  - ❂ (COLOR) : −2
  - ◑ (CONTRAST) : −15
  - ☼ (BRIGHT) : +3

Nota: Para este ajuste, no es necesario de activar el modo de FACTORY ADJ.

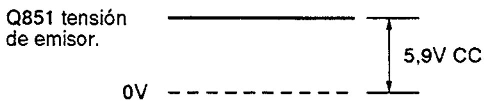
7.26 AJUSTE DE SENSITIVIDAD DE DPO

La sensitividad de la sección de la luz DPO se ajusta para determinar el nivel de la luz externa al que funcionamiento de DPO se activa. Este ajuste se hace por VR851 en el montaje de DPO (refiérase de la figura 7 - 21.), y debe ser ejecutado de acuerdo con la preferencia de un cliente. El procedimiento de ajuste que se usa en la fábrica se escribe para la referencia.

(1) Usando un bulbo de luz incandescente como una fuente de luz, la luz pica directamente hacia la sección sensitiva de la luz con el nivel de 50 lux de DPO.

(2) Ponga el interruptor DPO (S859) en ON. "DPO ON" se aparece en la pantalla.

(3) El montaje de DPO VR51 se ajusta para obtener una tensión de 5,9V (± 0,1V) al emisor Q851.



7.27 METODO DE MEDIDA DE TENSION DE ANODO

Desconecte el cable de anodo de FBT como se escribe en la figura 7 - 16. Mida en el punto donde el cable entra en FBT.

Aviso: Tenga cuidado en medir esta tensión muy alta. Las tensiones altas se queden también en los alrededores de las tablas de circuito (montaje CRT DRIVE, montaje POWER SUPPLY - DEFLECTION).

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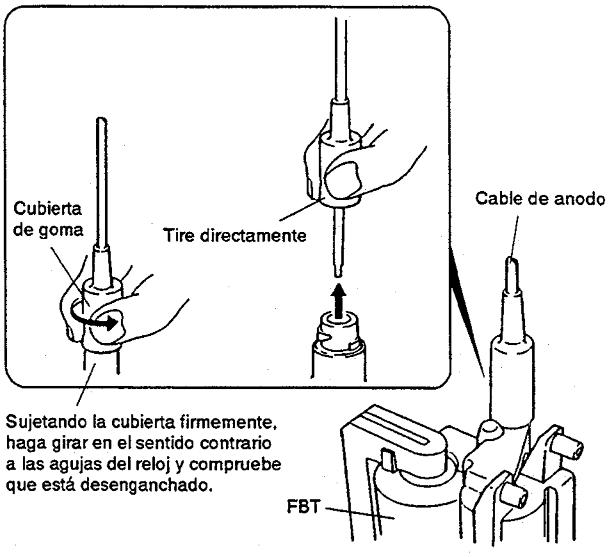
Antes de remover el cable de anodo, desconecte la alimentación. Quite el cable de CA y haga una unidad descargarse por más de 1 minuto.


Nota: Determine la extensión de la cubierta de goma antes de desconectar el cable.

Sujetando la cubierta firmemente, haga girar en el sentido contrario a las agujas del reloj y compruebe que está desenganchado.

Nota: Al conectar el cable otra vez, ejecute en el orden contrario. Después de reconectar, tire el cable para asegurar que está fijo.

Fig. 7-16 Desconexión del cable de anodo

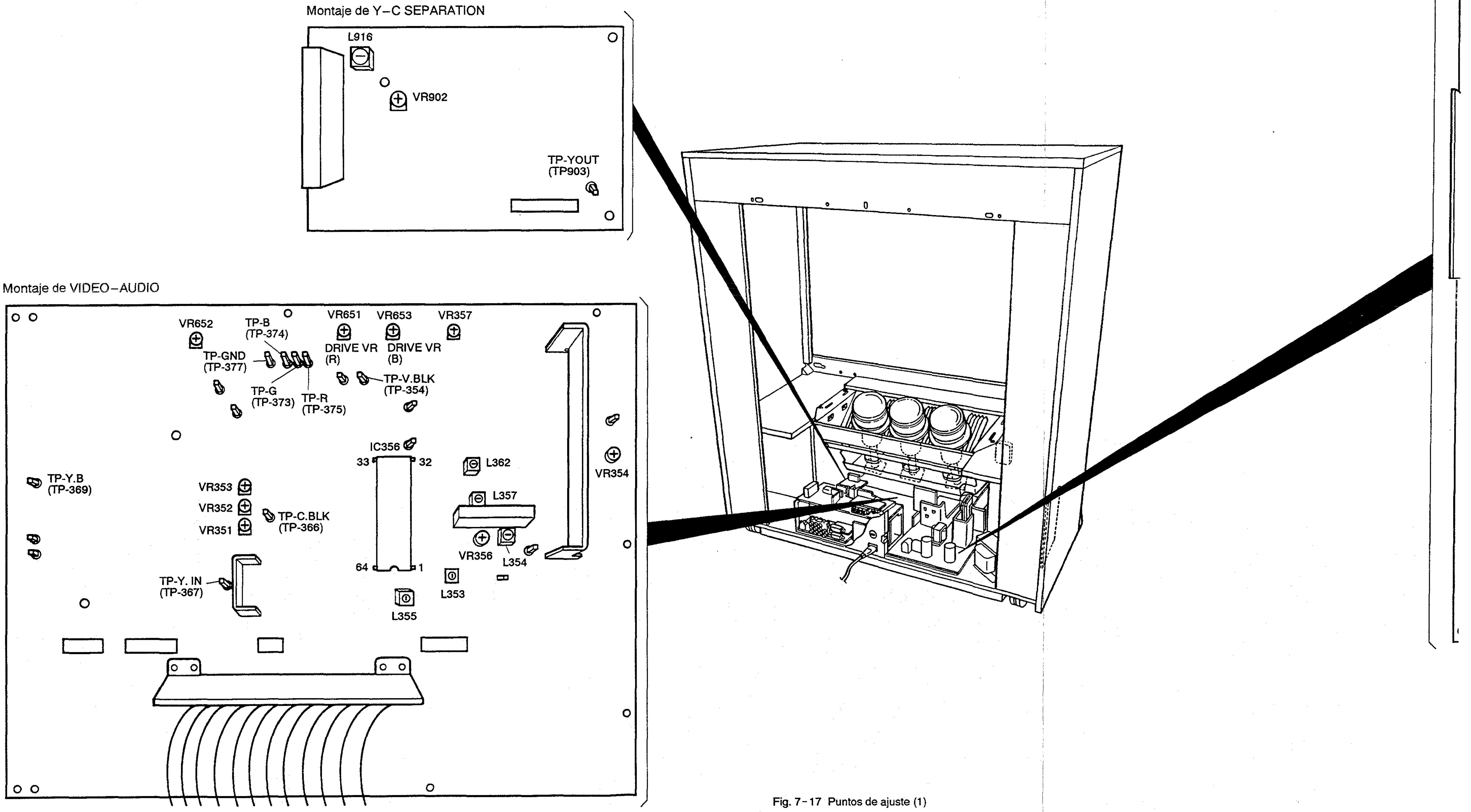

Montaje de Y–C SEPARATION
L916
VR902
TP-YOUT
(TP903)
Montaje de VIDEO–AUDIO
VR652
TP-B
(TP-374)
VR651
VR653
VR357
DRIVE VR
(R)
DRIVE VR
(B)
TP-GND
(TP-377)
TP-V.BLK
(TP-354)
TP-G
(TP-373)
TP-R
(TP-375)
IC356
33
32
L362
VR354
TP-Y.B
(TP-369)
VR353
VR352
TP-C.BLK
(TP-366)
VR351
L357
VR356
L354
64
1
L353
TP-Y. IN
(TP-367)
L355

Fig. 7-17 Puntos de ajuste (1)

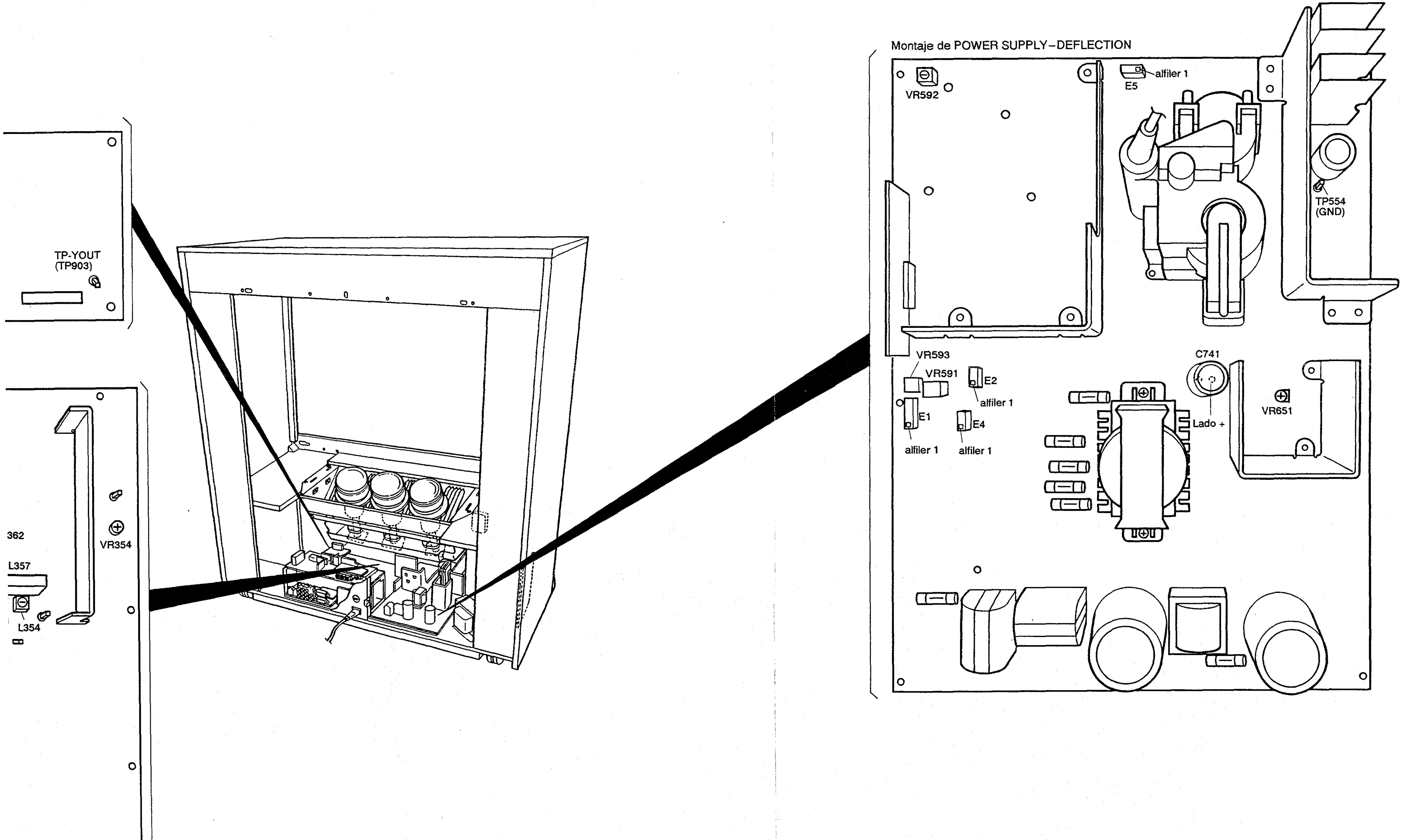

TP-YOUT
(TP903)
362
L357
L354
VR354
Montaje de POWER SUPPLY-DEFLECTION
VR592
alfiler 1
E5
TP554
(GND)
VR593
VR591
E2
alfiler 1
E1
E4
alfiler 1
alfiler 1
C741
Lado +
VR651

Fig. 7-17 Puntos de ajuste (1)

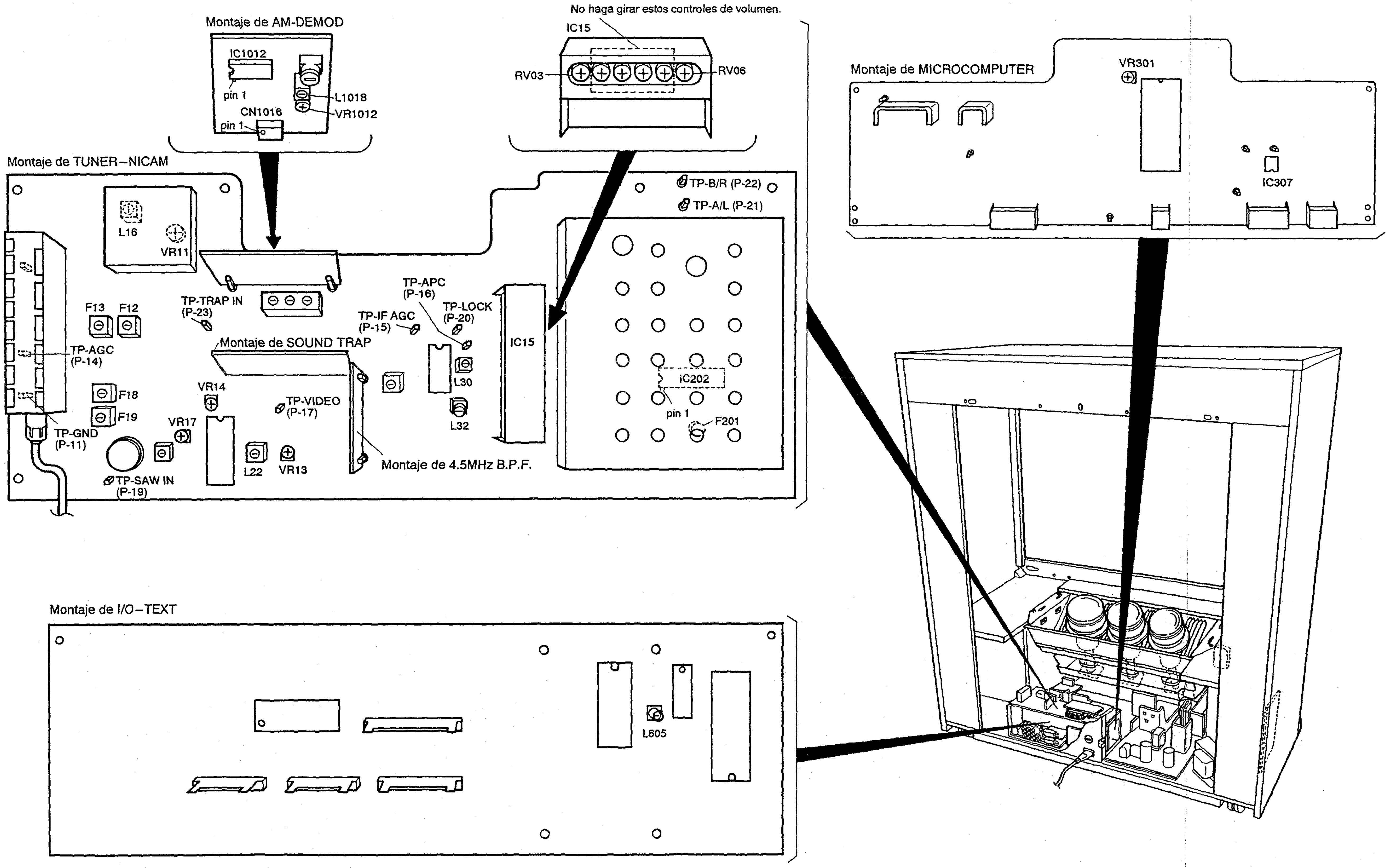

No haga girar estos controles de volumen.
Montaje de AM-DEMOD
IC1012
pin 1
L1018
VR1012
CN1016
pin 1
IC15
RV03
RV06
Montaje de MICROCOMPUTER
VR301
IC307
Montaje de TUNER–NICAM
L16
VR11
TP-B/R (P-22)
TP-A/L (P-21)
TP-APC
(P-16)
TP-LOCK
(P-20)
TP-TRAP IN
(P-23)
TP-IF AGC
(P-15)
F13
F12
TP-AGC
(P-14)
Montaje de SOUND TRAP
IC15
L30
IC202
pin 1
F201
VR14
F18
F19
TP-VIDEO
(P-17)
L32
VR17
TP-GND
(P-11)
L22
VR13
Montaje de 4.5MHz B.P.F.
TP-SAW IN
(P-19)
Montaje de I/O–TEXT
L605

Fig. 7-18 Puntos de ajuste (2)

Yogo de desviación
Espaciador

estos controles de volumen.

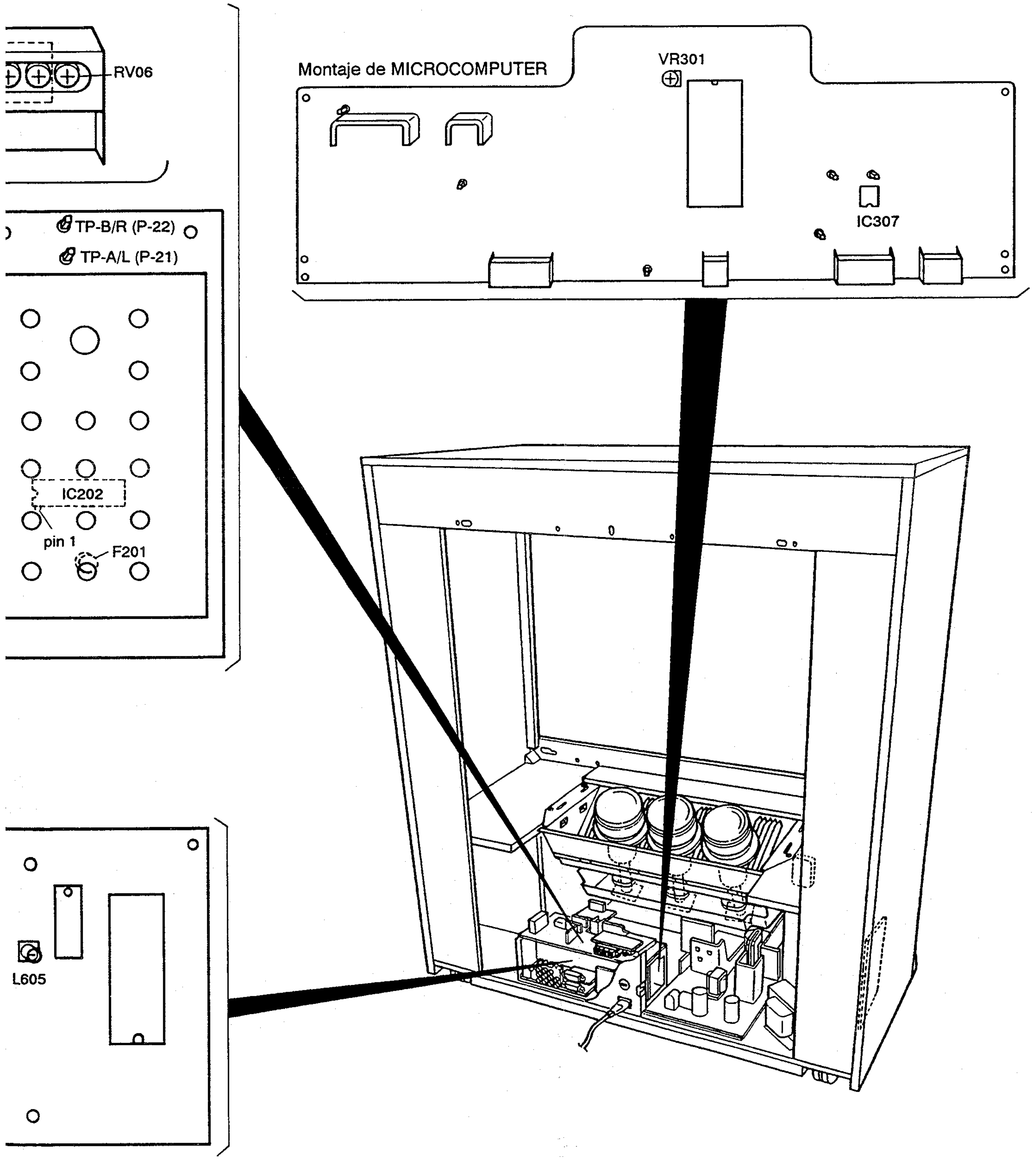

RV06
TP-B/R (P-22)
TP-A/L (P-21)
IC202
pin 1
F201
L605
Montaje de MICROCOMPUTER
VR301
IC307

Fig. 7-18 Puntos de ajuste (2)

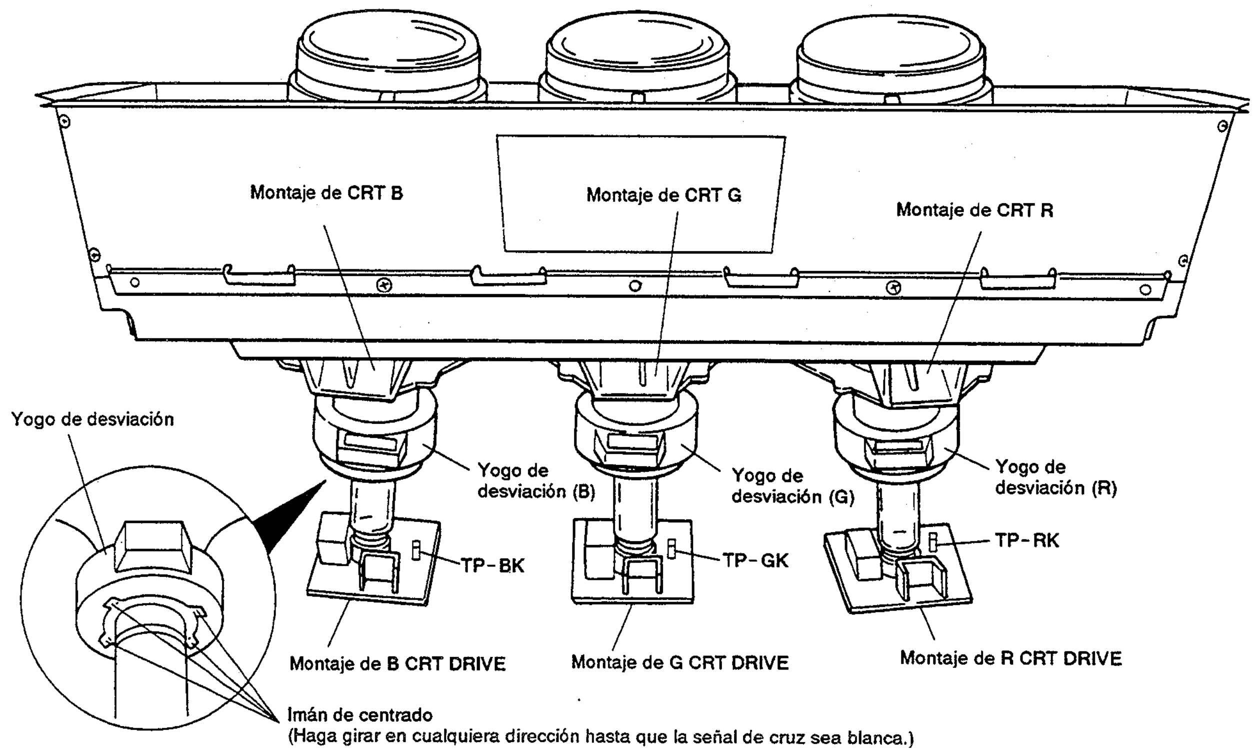

Montaje de CRT B
Montaje de CRT G
Montaje de CRT R
Yogo de desviación
Yogo de desviación (B)
Yogo de desviación (G)
Yogo de desviación (R)
TP-BK
TP-GK
TP-RK
Montaje de B CRT DRIVE
Montaje de G CRT DRIVE
Montaje de R CRT DRIVE
Imán de centrado
(Haga girar en cualquiera dirección hasta que la señal de cruz sea blanca.)

Fig. 7-19 Punto de ajuste (3)

Nota: Sujete un papel trasluciente como un papel de dibujo, mientras insertando los espaciadores de 7mm de espesor para colocarlos en las posiciones regulares de la superficie de la pantalla. Use los espaciadores que proveen mismos espesos en ambos lados izquierdo y derecho.

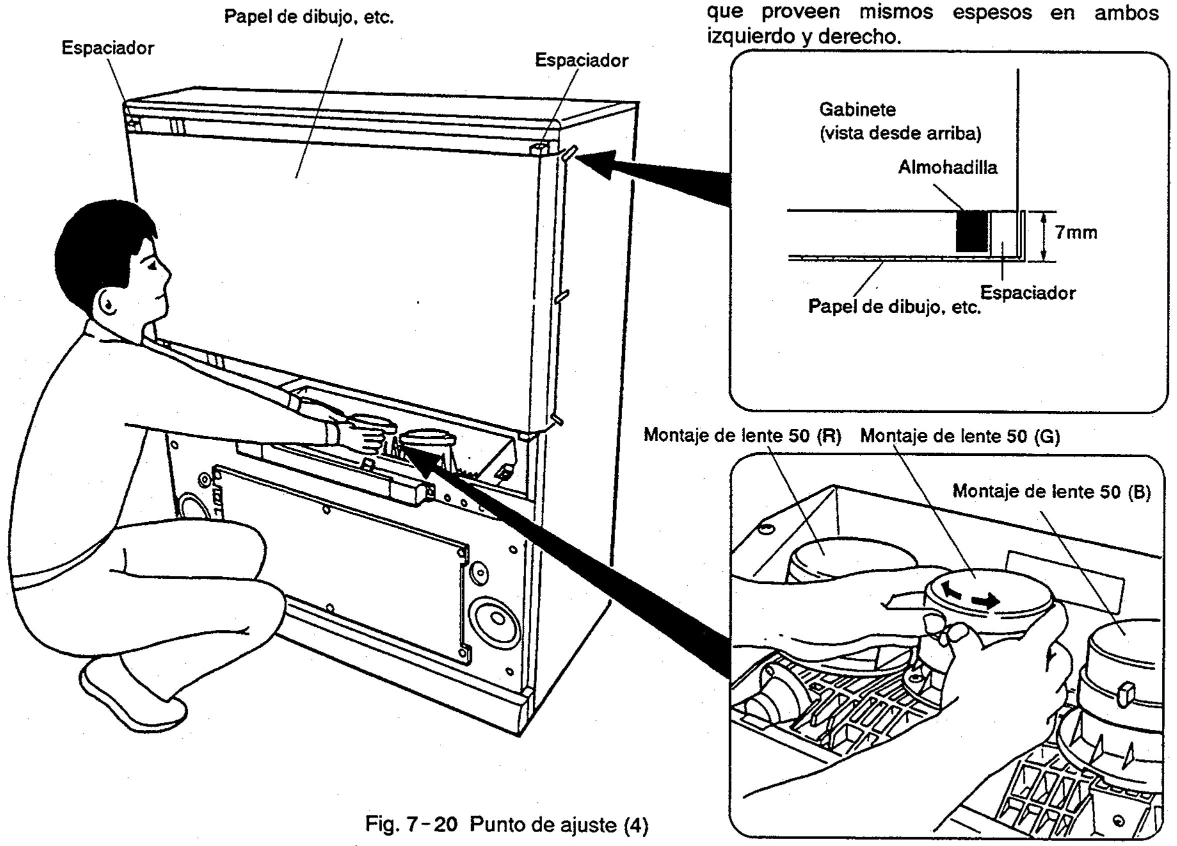
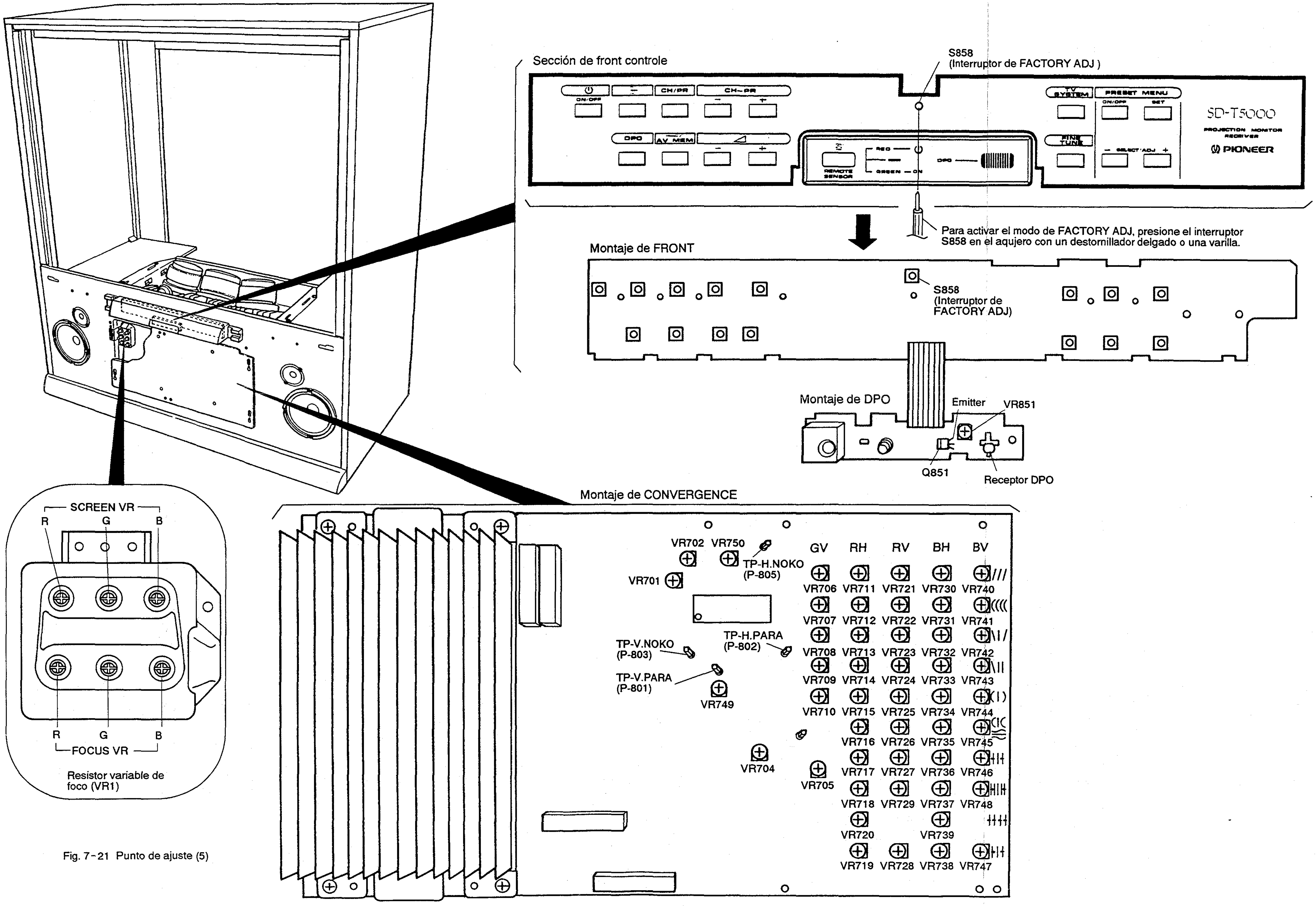

Papel de dibujo, etc.
Espaciador
Espaciador
Gabinete
(vista desde arriba)
Almohadilla
7mm
Espaciador
Papel de dibujo, etc.
Montaje de lente 50 (R)
Montaje de lente 50 (G)
Montaje de lente 50 (B)

Fig. 7-20 Punto de ajuste (4)



Sección de front controle

Para activar el modo de FACTORY ADJ, presione el interruptor S858 en el aquiero con un destornillador delgado o una varilla.

Montaje de FRONT

Montaje de DPO

Montaje de CONVERGENCE

S858
(Interruptor de FACTORY ADJ)
ON/OFF
CH/PR
CH–PR
–
+
DPO
AV MEM
REMOTE SENSOR
RED
GREEN — ON
TV SYSTEM
PRESET MENU
ON/OFF
SET
FINE TUNE
– SELECT/ADJ +
SD-T5000
PROJECTION MONITOR RECEIVER
PIONEER
S858
(Interruptor de FACTORY ADJ)
Emitter
VR851
Q851
Receptor DPO
SCREEN VR
R
G
B
R
G
B
FOCUS VR
Resistor variable de foco (VR1)
VR702
VR750
TP-H.NOKO
(P-805)
VR701
TP-V.NOKO
(P-803)
TP-H.PARA
(P-802)
TP-V.PARA
(P-801)
VR749
VR704
VR705
GV
RH
RV
BH
BV
VR706 VR711 VR721 VR730 VR740
VR707 VR712 VR722 VR731 VR741
VR708 VR713 VR723 VR732 VR742
VR709 VR714 VR724 VR733 VR743
VR710 VR715 VR725 VR734 VR744
VR716 VR726 VR735 VR745
VR717 VR727 VR736 VR746
VR718 VR729 VR737 VR748
VR720 VR739
VR719 VR728 VR738 VR747

Fig. 7-21 Punto de ajuste (5)

8. REPLACING THE CRT ASSEMBLY

Serviceman Warning
When replacing the CRT assembly, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.

The anode cables of the CRT assembly R, G, and B in PROJECTION MONITOR RECEIVER are connected in series as shown in Fig. 8-1.
When replacing the CRT assembly, the anode cable have to be cut.

Note: Since the anode cables for the CRT assembly to service supplies are only available in half lengths, either cut longer lengths, or join older lengths of cable to ensure that the original cable length is used.

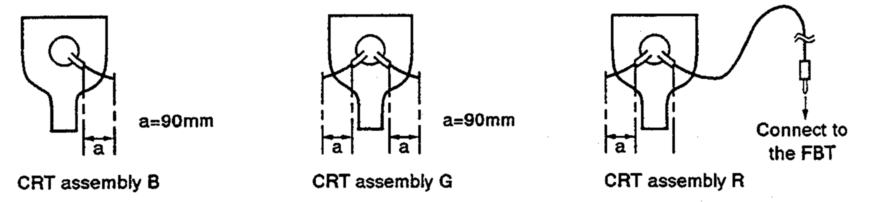
Table 8-1 Cable disconnecting methods

Cable	Replacement CRT assembly		
	When CRT assembly B is replaced	When CRT assembly G is replaced	When CRT assembly R is replaced
Cable ⓐ	——	——	Disconnect the anode cable from the FBT. (Refer to "Fig.7 - 16 Disconnecting the anode cable".)
Cable ⓑ	Leave it as is	Cut a place 20mm from the exact center towards the CRT assembly G	Cut a place 20mm from the exact center towards the CRT assembly R
Cable ⓒ	Cut a place 20mm from the exact center towards the CRT assembly B	Cut a place 20mm from the exact center towards the CRT assembly G	Leave it as is

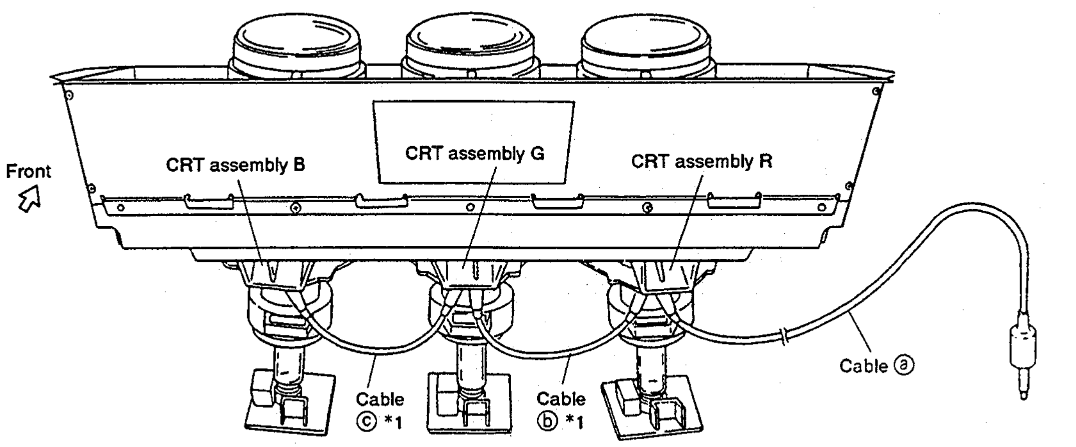
Note: Do not cut other cables by mistake.

8.1 WHEN REPLACING THE CRT ASSEMBLY

Each CRT assembly supplied as a spare part is as shown below.



a
a=90mm
CRT assembly B
a
a
a=90mm
CRT assembly G
a
Connect to the FBT
CRT assembly R



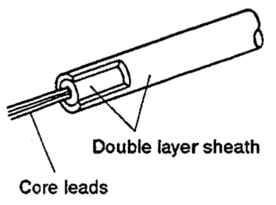
Front
CRT assembly B
CRT assembly G
CRT assembly R
Cable ⓐ
Cable ⓒ *1
Cable ⓑ *1

*1: Length of cable ⓒ and ⓑ is 180mm.

Fig. 8-1 Connection diagram of the each CRT assemblies

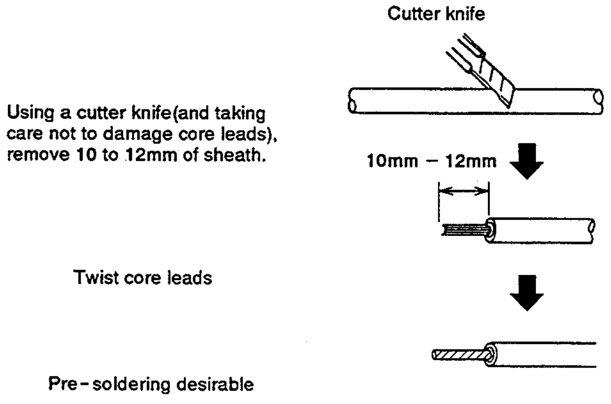
8.2 ANODE CABLE SHEATH PEELING

- Peel the sheath of the end of cut anode cable and new anode cable.
- The anode cable structure is outlined in Fig. 8-2. Note that the sheath consists of two layers.
- The method used to peel the sheath back is illustrated in Fig. 8-3. Use a cutter knife, taking care not to damage the core leads.



Double layer sheath
Core leads

Fig. 8-2 Anode cable structure



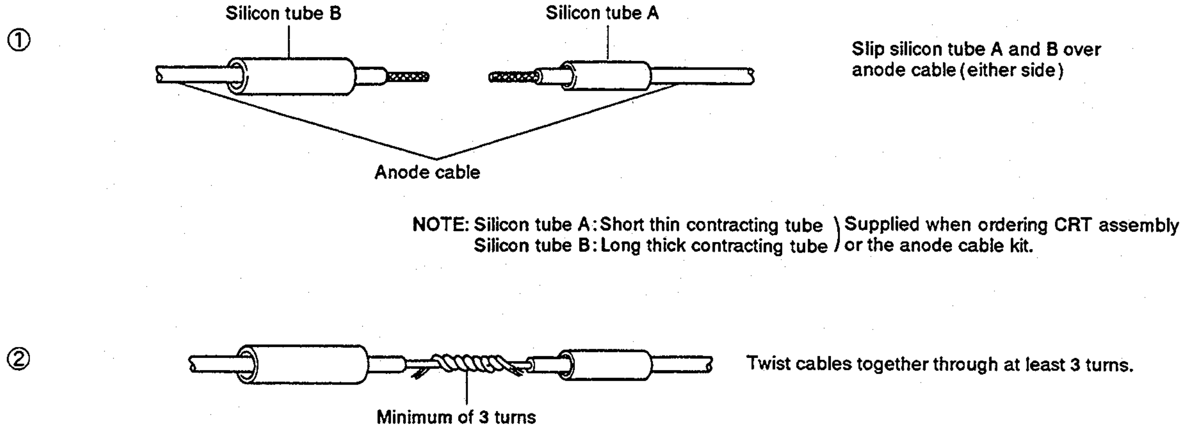
Cutter knife
Using a cutter knife(and taking care not to damage core leads), remove 10 to 12mm of sheath.
10mm – 12mm
Twist core leads
Pre-soldering desirable

Fig. 8-3 Anode cable sheath peeling

8.3 ANODE CABLE JOINING PROCEDURE

- Join the cut anode cable and the new anode cable to restore as shown in Fig. 8-1. Also, when replacing the FBT, refer to section 7.27 "Anode voltage measuring method".
- Slip two silicon tubes (silicon tubes A and B in Fig. 8-4) over the anode cables before making the join.
- The silicon adhesive is applied to guard the cable core leads from external air. Apply binder liberally. After completing the joint (at step ⑩ in Fig. 8-4-1 thru 3), check that there is no hole in the silicon binder and the tube interior cannot be seen.
- Leave the silicon adhesive to harden overnight.

CAUTION: For the silicon adhesive, be sure to use silicon adhesive part no. GYL-017.

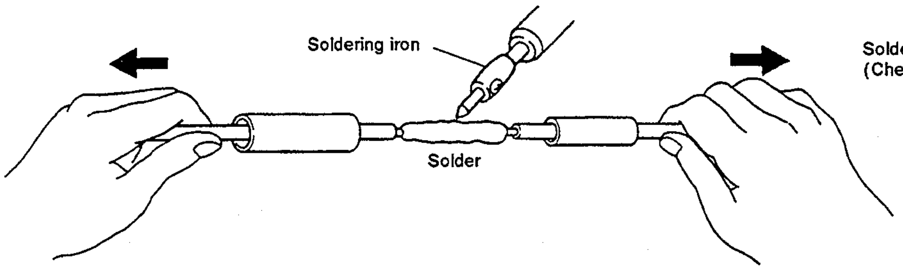


①
Silicon tube B
Silicon tube A
Slip silicon tube A and B over anode cable (either side)
Anode cable
②
Twist cables together through at least 3 turns.
Minimum of 3 turns

NOTE: Silicon tube A: Short thin contracting tube
Silicon tube B: Long thick contracting tube
Supplied when ordering CRT assembly or the anode cable kit.

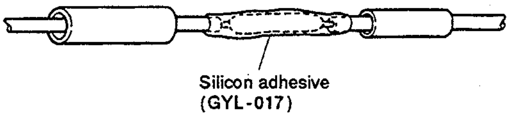
Fig. 8-4-1 Anode cable joining procedure (1)

③


Soldering iron
Solder

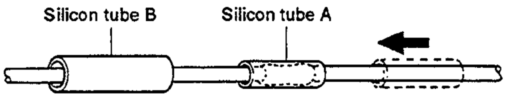
Solder the joint, and pull at both ends.
(Check against faulty soldering.)

④


Silicon adhesive
(GYL-017)

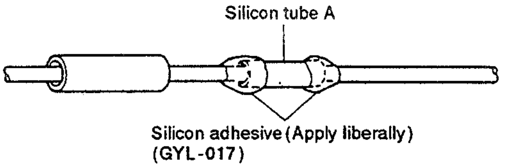
Apply silicon adhesive liberally.
(Cover the entire soldered section and remaining bare core leads.)

⑤


Silicon tube B
Silicon tube A

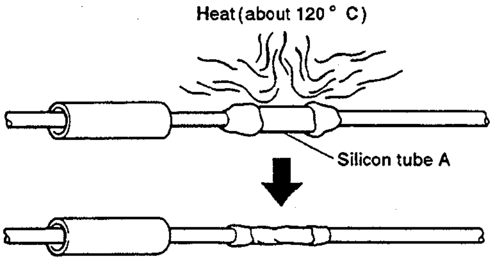
Cover the silicon adhesive section with silicon tube A.
(With the center of the silicon tube A corresponding to the solder section)

⑥


Silicon tube A
Silicon adhesive (Apply liberally)
(GYL-017)

Apply liberal amounts of silicon adhesive to both ends of silicon tube A

⑦

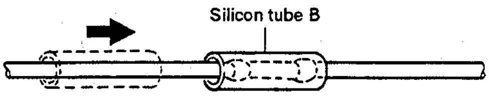

Heat (about 120 ° C)
Silicon tube A

Apply heat (about 120 ° C) to contract silicon tube A.

Note: Use an industrial drier or soldering iron as the heat source.

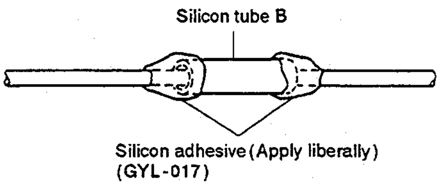
Check that the silicon adhesive has been applied evenly without air pockets etc. If there are any pockets etc, apply additional silicon adhesive.

⑧


Silicon tube B

Slip silicon tube B over silicon tube A.
(With the center of silicon tube B also corresponding to the solder section)

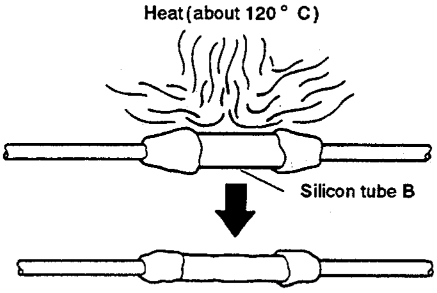
⑨


Silicon tube B
Silicon adhesive (Apply liberally)
(GYL-017)

Apply liberal amounts of silicon adhesive to both ends of silicon tube B.

Fig. 8-4-2 Anode cable joining procedure (2)

⑩

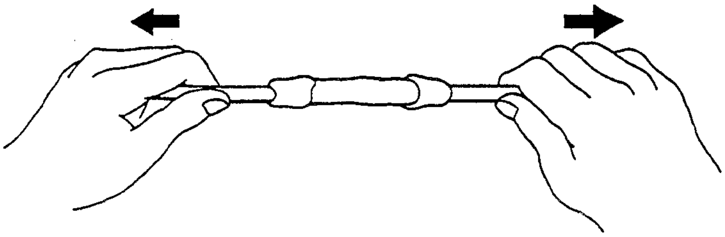


Apply heat(about 120° C)to contract silicon tube B.

Note: Use an industrial drier or soldering iron as the heat source.

Check that the silicon adhesive has been applied evenly without air pockets etc. If there are any pockets etc, apply additional silicon adhesive.

⑪



Gently tug both ends to check that the cables do not separate.

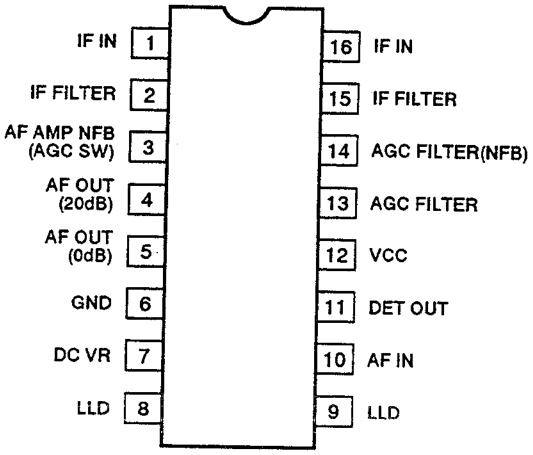
Fig. 8-4-3 Anode cable joining procedure(3)

9. IC INFORMATION

■ LA7710

- Function : IF amplifier, detection, IF AGC, electric VR, AF driver and PAL/SECAM turnover switch
- Usage : For processing the PAL/SECAM audio IF signal of the VTR and television.

• Pin Arrangement

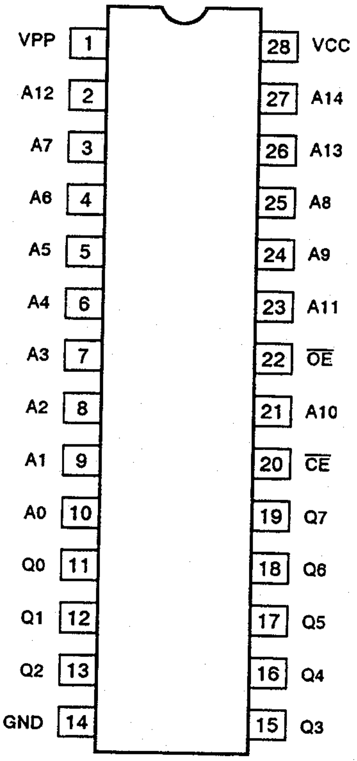

IF IN 1
IF FILTER 2
AF AMP NFB (AGC SW) 3
AF OUT (20dB) 4
AF OUT (0dB) 5
GND 6
DC VR 7
LLD 8
16 IF IN
15 IF FILTER
14 AGC FILTER(NFB)
13 AGC FILTER
12 VCC
11 DET OUT
10 AF IN
9 LLD

(Top view)

■ PDN001A9

256k bit EPROM

• Pin Arrangement

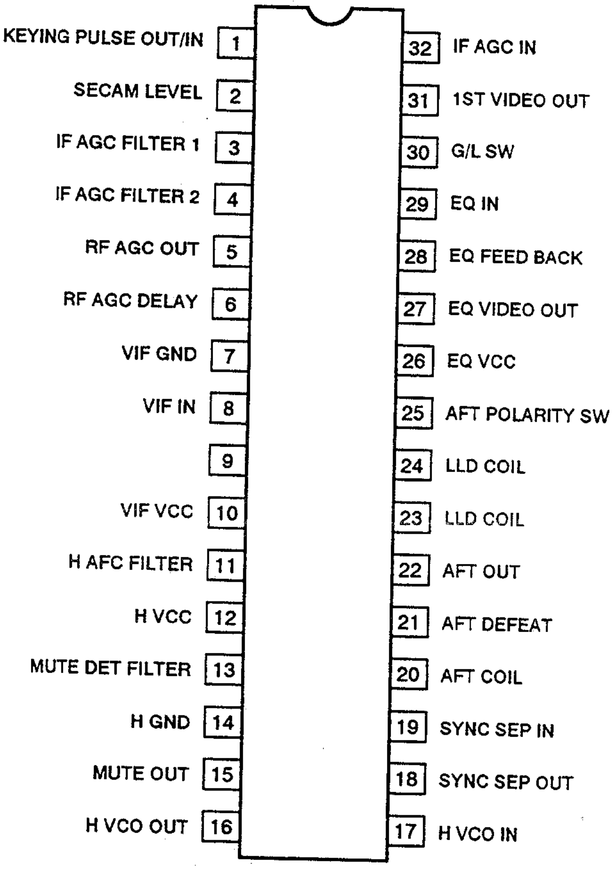

VPP 1
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
Q0 11
Q1 12
Q2 13
GND 14
28 VCC
27 A14
26 A13
25 A8
24 A9
23 A11
22 $\overline{OE}$
21 A10
20 $\overline{CE}$
19 Q7
18 Q6
17 Q5
16 Q4
15 Q3

(Top view)

■ M51419ASP

MULTI VIF

• Pin Arrangement


KEYING PULSE OUT/IN 1
SECAM LEVEL 2
IF AGC FILTER 1 3
IF AGC FILTER 2 4
RF AGC OUT 5
RF AGC DELAY 6
VIF GND 7
VIF IN 8
9
VIF VCC 10
H AFC FILTER 11
H VCC 12
MUTE DET FILTER 13
H GND 14
MUTE OUT 15
H VCO OUT 16
32 IF AGC IN
31 1ST VIDEO OUT
30 G/L SW
29 EQ IN
28 EQ FEED BACK
27 EQ VIDEO OUT
26 EQ VCC
25 AFT POLARITY SW
24 LLD COIL
23 LLD COIL
22 AFT OUT
21 AFT DEFEAT
20 AFT COIL
19 SYNC SEP IN
18 SYNC SEP OUT
17 H VCO IN

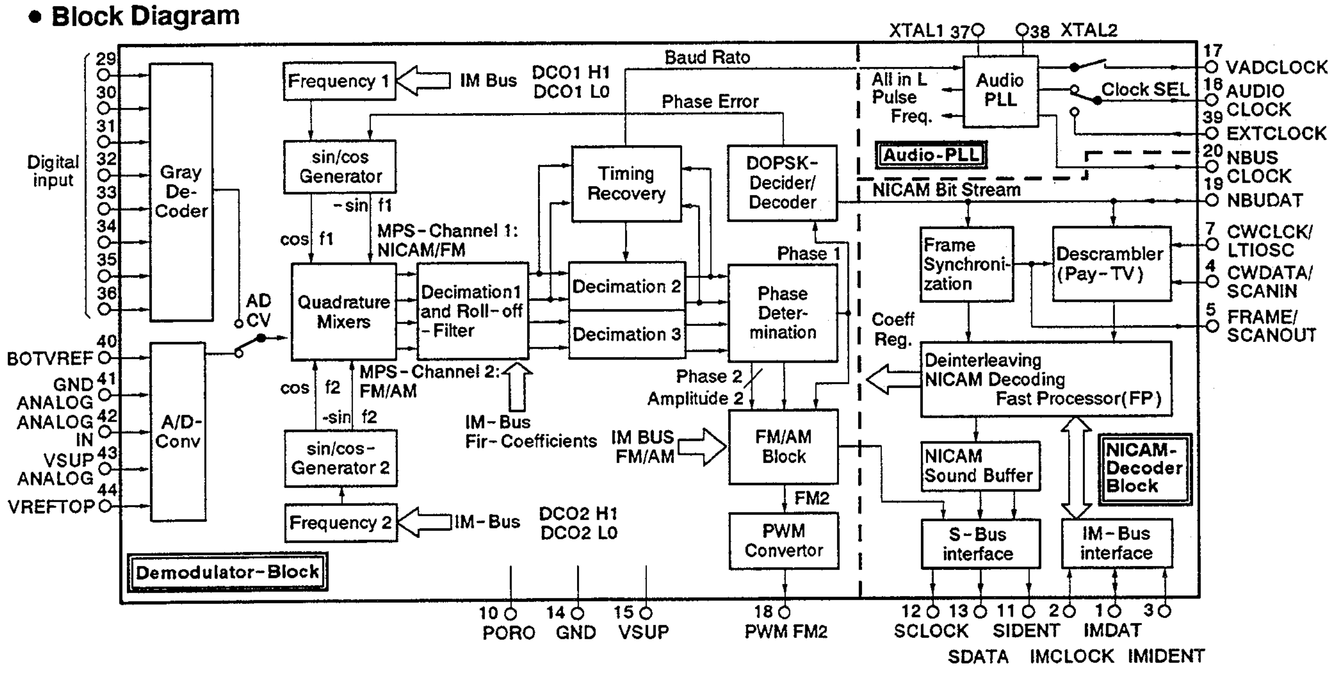
(Top view)

Pin Name	Pin Function
A0–A14	Address inputs
$\overline{CE}$	Chip enable/power down
$\overline{OE}$	Output enable
GND	Ground
Q0–Q7	Outputs

■ MSP2400

FM demodulator / NICAM decoder

• Block Diagram


XTAL1 37
38 XTAL2
Digital input
29
30
31
32
33
34
35
36
Gray De-Coder
AD CV
BOTVREF 40
GND ANALOG 41
ANALOG IN 42
VSUP ANALOG 43
VREFTOP 44
A/D-Conv
Demodulator-Block
Frequency 1
IM Bus
DCO1 H1
DCO1 L0
sin/cos Generator
-sin f1
cos f1
MPS-Channel 1: NICAM/FM
Quadrature Mixers
Decimation1 and Roll-off -Filter
MPS-Channel 2: FM/AM
cos f2
-sin f2
sin/cos-Generator 2
Frequency 2
IM-Bus
DCO2 H1
DCO2 L0
IM-Bus Fir-Coefficients
Baud Rato
Phase Error
Timing Recovery
Decimation 2
Decimation 3
DOPSK-Decider/ Decoder
Phase 1
Phase Deter-mination
Phase 2
Amplitude 2
IM BUS FM/AM
FM/AM Block
FM2
PWM Convertor
All in L Pulse Freq.
Audio PLL
Audio-PLL
Clock SEL
NICAM Bit Stream
Coeff Reg.
Frame Synchroni-zation
Descrambler (Pay-TV)
Deinterleaving NICAM Decoding Fast Processor(FP)
NICAM Sound Buffer
NICAM-Decoder Block
S-Bus interface
IM-Bus interface
17 VADCLOCK
18 AUDIO CLOCK
39 EXTCLOCK
20 NBUS CLOCK
19 NBUDAT
7 CWCLCK/ LTIOSC
4 CWDATA/ SCANIN
5 FRAME/ SCANOUT
10 PORQ
14 GND
15 VSUP
18 PWM FM2
12 SCLOCK
13 SDATA
11 SIDENT
2 IMCLOCK
1 IMDAT
3 IMIDENT

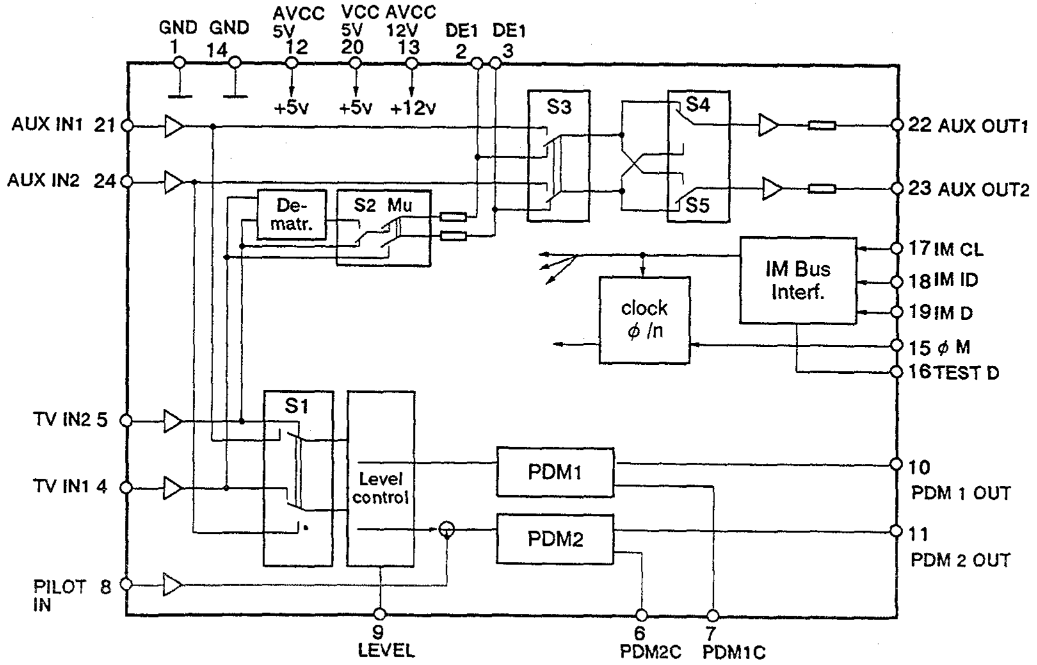
• Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	IMDAT	IM-BUS DATA input / output	23	DIGOUT2	Dig. output (Test, not used. to GND)
2	IMCLOCK	IM-BUS Clock input	24	DIGOUT3	Dig. output (Test, not used. to GND)
3	IMIDENT	IM-BUS Ident input	25	DIGOUT4	Dig. output (Test, not used. to GND)
4	CWDATA/SCANIN	Pay TV data / test input (Not used. to GND)	26	DIGOUT5	Dig. output (Test, not used. to GND)
5	FRAME/SCAN OUT	Frame 1kHz input / test output (Not used. to open)	27	DIGOUT6	Dig. output (Test, not used. to GND)
6	IOTEST	For test only (Not used. to GND)	28	DIGOUT7	Dig. output MSB (Test, not used. to GND)
7	CWCLOCK/LTIOSC	Pay TV clock / test input (Not used. to GND)	29	DIGIN7	Dig. intput MSB (from ext. ADC. not used. to
8	ROMTEST	For test only (Not used. to GND)	30	DIGIN6	Dig. intput (from ext. ADC. not used. to GND)
9	RDSOUT	For test only (Not used. to open)	31	DIGIN5	Dig. intput (from ext. ADC. not used. to GND)
10	PORQ	Power on reset (active low)	32	DIGIN4	Dig. intput (from ext. ADC. not used. to GND)
11	SIDENT	S-bus ident	33	DIGIN3	Dig. intput (from ext. ADC. not used. to GND)
12	SCLOCK	S-bus clock	34	DIGIN2	Dig. intput (from ext. ADC. not used. to GND)
13	SDATA	S-bus data	35	DIGIN1	Dig. intput (from ext. ADC. not used. to GND)
14	GND	Ground (digital)	36	DIGIN0	Dig. intput LSB (from ext. ADC. not used. to GND)
15	VSUP	Supply voltage (digital)	37	XTAL1	Crystal (18.432MHz)
16	AUDIO CLOCK	Main clock for AMU, APU, ADC or ACP	38	XTAL2	Crystal (18.432MHz)
17	VAD CLOCK	Clock for external A/D converter (Not used. to open)	39	EXTCLOCK	Input for external clock (D2MAC) to be passed through MSP.
18	PWMFM2	FM2 channel for FM-identification ; to be connected to pin 8 via bandpass of ADC2311E or pin 19 of ACP. if bit 7 of MODE REG=0 then PWM FM2=0 (Hi impedance)	40	BOTVREF	ADC :Bottom reference voltage (0V)
19	NBUDAT	NICAM728 serial I/O (Not used. to open)	41	GND ANALOG	ADC ground
20	NBUSCLOCK	Clock of digital NICAM bit stream (Not used. to open)	42	ANLOGIN	ADC :Analog input (sound IF only no video)
21	DIGOUT0	Dig. output LSB (Test, not used. to GND)	43	VSUPANALOG	ADC :supply voltage (5V)
22	DIGOUT1	Dig. output (Test, not used. to GND)	44	VREFTOP	ADC :Top reference voltage (approx. 2.4V)

■ ADC2301E

AUDIO A/D converter

• Block Diagram


GND 1
GND 14
AVCC 5V 12
VCC 5V 20
AVCC 12V 13
DE1 2
DE1 3
+5v
+5v
+12v
AUX IN1 21
AUX IN2 24
S3
S4
S5
De-matr.
S2 Mu
22 AUX OUT1
23 AUX OUT2
17 IM CL
18 IM ID
19 IM D
15 φ M
16 TEST D
IM Bus Interf.
clock φ /n
TV IN2 5
TV IN1 4
S1
Level control
PDM1
PDM2
10 PDM 1 OUT
11 PDM 2 OUT
PILOT IN 8
9 LEVEL
6 PDM2C
7 PDM1C

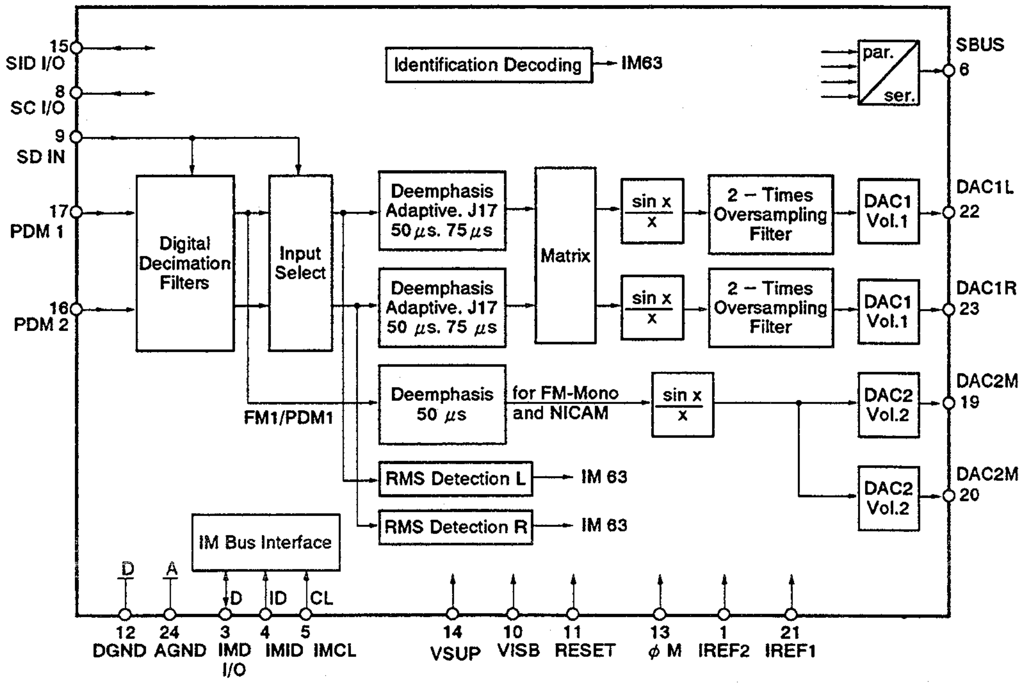
• Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	GND	Ground	13	AVcc 12V	Vsup2 +12V supply voltage (analog)
2	DE1	Deemphasis DE1 (Not used).	14	GND	Ground
3	DE1	Deemphasis DE1 (Not used.)	15	φ M	φ M Main clock input
4	TV IN2	TV in 2 analog input (Not used).	16	TEST D	Test data output (Not used).
5	TV IN1	TV in 1 analog input (Not used).	17	IMCL	IM Bus clock input
6	PDM2C	PDMII capacitor C2	18	IMID	IM Bus ident input
7	PDM1C	PDMI capacitor C1 (Not used).	19	IMD	IM Bus data input
8	PILOT IN	Pilot in analog input	20	Vcc 5V	Vsup1 +5V supply voltage
9	LEVEL	Level control, RC pin	21	AUX IN1	AUX in 1 analog input (Not used).
10	PDM1OUT	PDM 1 digital output (Not used).	22	AUX OUT1	AUX out 1 analog output (Not used).
11	PDM2OUT	PDM 2 digital output	23	AUX OUT2	AUX out 2 analog output (Not used).
12	AVcc 5V	Vsup1 +5V supply voltage (analog)	24	AUX IN2	AUX in 2 analog input (Not used).

AMU2481VS

Digital realtime audio mixer

• Block Diagram


15 SID I/O
8 SC I/O
9 SD IN
17 PDM 1
16 PDM 2
Identification Decoding
IM63
par.
ser.
SBUS 6
Digital Decimation Filters
Input Select
Deemphasis Adaptive. J17 50µs. 75µs
Deemphasis Adaptive. J17 50 µs. 75 µs
Matrix
sin x / x
sin x / x
2 – Times Oversampling Filter
2 – Times Oversampling Filter
DAC1 Vol.1
DAC1 Vol.1
DAC1L 22
DAC1R 23
FM1/PDM1
Deemphasis 50 µs
for FM-Mono and NICAM
sin x / x
DAC2 Vol.2
DAC2 Vol.2
DAC2M 19
DAC2M 20
RMS Detection L
IM 63
RMS Detection R
IM 63
IM Bus Interface
D
A
D
ID
CL
12 DGND
24 AGND
3 IMD I/O
4 IMID
5 IMCL
14 VSUP
10 VISB
11 RESET
13 ϕ M
1 IREF2
21 IREF1

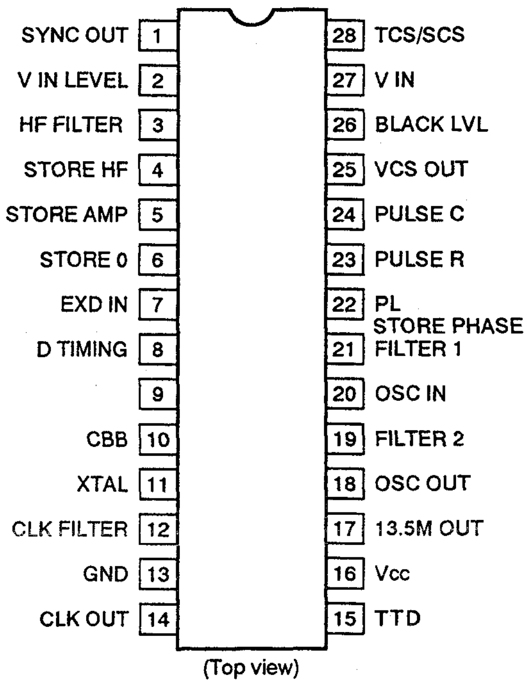
• Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	IREF2	IREF2 Reference current input (for DAC 2)	13	ϕ M	ϕ M clock input
2	L.V	Leave vacant (Not used).	14	VSUP	VSUP
3	IMD I/O	IM Bus data input/output	15	SID I/O	S-ident input/output
4	IMID	IM Bus ident input	16	PDM2	PDM2 digital input (R)
5	IMCL	IM Bus clock input	17	PDM1	PDM1 digital input (L)
6	SBUS	S-data output (Not used).	18	L.V	Leave vacant (Not used).
7	L.V	Leave vacant (Not used).	19	DAC2M	DAC2M output (Not used).
8	SC I/O	S-clock input/output	20	DAC2M	DAC2M output (Not used).
9	SD IN	S-data input	21	IREF1	IREF1 Reference current input (for DAC 1)
10	VISB	VISB internal substrate bias voltage	22	DAC1L	DAC1L output
11	RESET	$\overline{\text{Reset}}$ input	23	DAC1R	DAC1R output
12	DGND	Ground (digital)	24	AGND	Ground (analog)

SAA5191

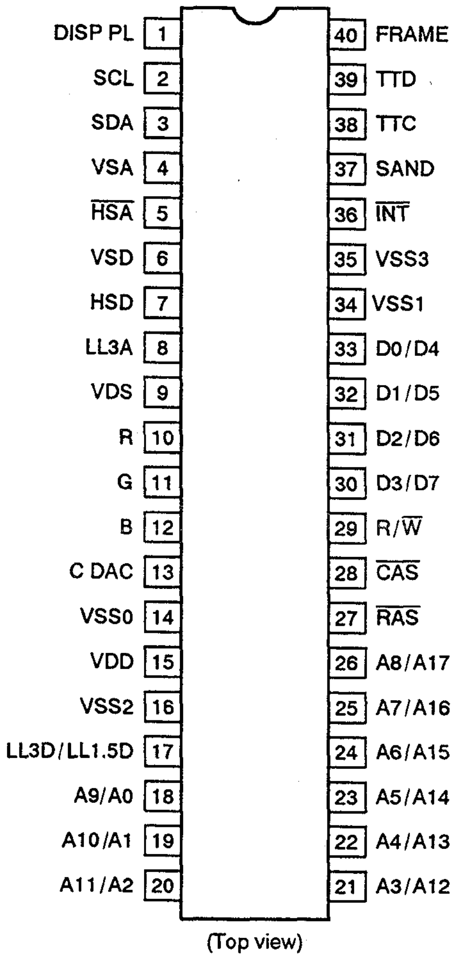
Teletext video processor

• Pin Arrangement


SYNC OUT 1
V IN LEVEL 2
HF FILTER 3
STORE HF 4
STORE AMP 5
STORE 0 6
EXD IN 7
D TIMING 8
9
CBB 10
XTAL 11
CLK FILTER 12
GND 13
CLK OUT 14
28 TCS/SCS
27 V IN
26 BLACK LVL
25 VCS OUT
24 PULSE C
23 PULSE R
22 PL
STORE PHASE
21 FILTER 1
20 OSC IN
19 FILTER 2
18 OSC OUT
17 13.5M OUT
16 Vcc
15 TTD
(Top view)

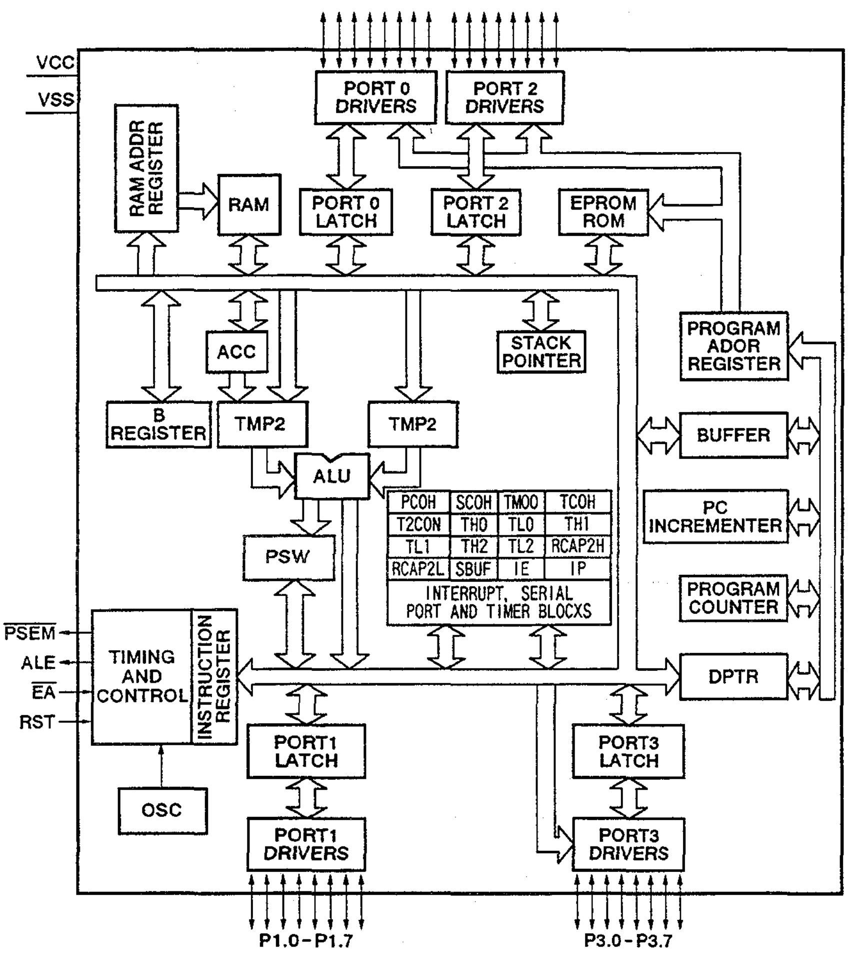
SAA9042P/A

• Pin Arrangement

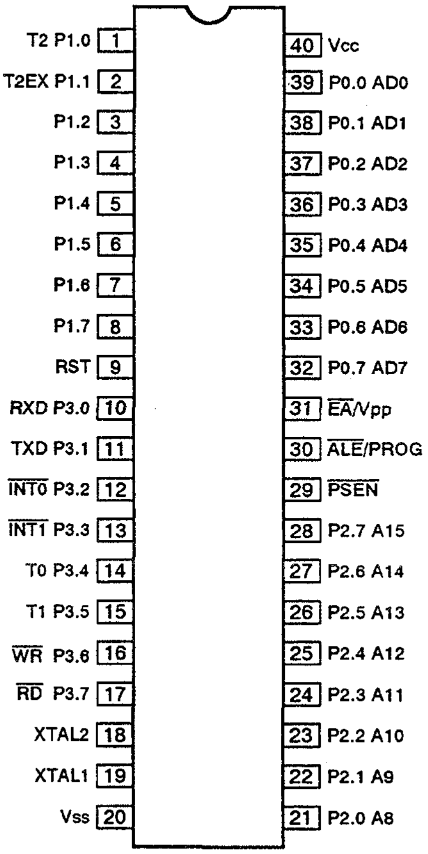

DISP PL 1
SCL 2
SDA 3
VSA 4
HSA 5
VSD 6
HSD 7
LL3A 8
VDS 9
R 10
G 11
B 12
C DAC 13
VSS0 14
VDD 15
VSS2 16
LL3D/LL1.5D 17
A9/A0 18
A10/A1 19
A11/A2 20
40 FRAME
39 TTD
38 TTC
37 SAND
36 INT
35 VSS3
34 VSS1
33 D0/D4
32 D1/D5
31 D2/D6
30 D3/D7
29 R/W
28 CAS
27 RAS
26 A8/A17
25 A7/A16
24 A6/A15
23 A5/A14
22 A4/A13
21 A3/A12
(Top view)

P8032AH

• Block Diagram


P0.0 - P0.7
P2.0 - P2.7
VCC
VSS
PORT 0 DRIVERS
PORT 2 DRIVERS
RAM ADDR REGISTER
RAM
PORT 0 LATCH
PORT 2 LATCH
EPROM ROM
ACC
STACK POINTER
PROGRAM ADOR REGISTER
B REGISTER
TMP2
TMP2
BUFFER
ALU
PCOH
SCOH
TMOO
TCOH
T2CON
THO
TLO
TH1
TL1
TH2
TL2
RCAP2H
RCAP2L
SBUF
IE
IP
INTERRUPT, SERIAL PORT AND TIMER BLOCXS
PC INCREMENTER
PSW
PROGRAM COUNTER
PSEM
ALE
EA
RST
TIMING AND CONTROL
INSTRUCTION REGISTER
DPTR
PORT1 LATCH
PORT3 LATCH
OSC
PORT1 DRIVERS
PORT3 DRIVERS
P1.0 - P1.7
P3.0 - P3.7

• Pin Arrangement


T2 P1.0 1
T2EX P1.1 2
P1.2 3
P1.3 4
P1.4 5
P1.5 6
P1.6 7
P1.7 8
RST 9
RXD P3.0 10
TXD P3.1 11
INT0 P3.2 12
INT1 P3.3 13
T0 P3.4 14
T1 P3.5 15
WR P3.6 16
RD P3.7 17
XTAL2 18
XTAL1 19
Vss 20
40 Vcc
39 P0.0 AD0
38 P0.1 AD1
37 P0.2 AD2
36 P0.3 AD3
35 P0.4 AD4
34 P0.5 AD5
33 P0.6 AD6
32 P0.7 AD7
31 EA/Vpp
30 ALE/PROG
29 PSEN
28 P2.7 A15
27 P2.6 A14
26 P2.5 A13
25 P2.4 A12
24 P2.3 A11
23 P2.2 A10
22 P2.1 A9
21 P2.0 A8

(Top view)

PD5173A9

Control microcomputer

● Pin Function

Note) I : CMOS input O : CMOS output N : N ch open dolein output

<table>
<tr><th>No.</th><th>Pin Name</th><th>I/O</th><th>Function</th><th>Active</th></tr>
<tr><td>1</td><td>OSC1</td><td>I</td><td>Clock input/output for display.</td><td></td></tr>
<tr><td>2</td><td>OSC2</td><td>O</td><td></td><td></td></tr>
<tr><td>3</td><td>KEY</td><td>I</td><td>Main unit key scan signal input. Decipher the format signal of IC851 (PD5136) in the FRONT assembly.</td><td></td></tr>
<tr><td>4</td><td>DPO</td><td>I</td><td>Analog voltage input for DPO control. (16 stages)</td><td></td></tr>
<tr><td>5</td><td>REM IN</td><td>I</td><td>Remote control signal input. Decipher the SR format signal.</td><td></td></tr>
<tr><td>6</td><td>VOLUME</td><td>O</td><td>PWM output for volume level control.</td><td>H</td></tr>
<tr><td>7</td><td>COLOR</td><td>N</td><td>PWM output for color level control.</td><td>H</td></tr>
<tr><td>8</td><td>TINT</td><td>N</td><td>PWM output for tint level control.</td><td>H</td></tr>
<tr><td>9</td><td>CONTR</td><td>N</td><td>PWM output for contrast level control.</td><td>H</td></tr>
<tr><td>10</td><td>BRIGHT</td><td>N</td><td>PWM output for brightness level control.</td><td>H</td></tr>
<tr><td>11</td><td>SHARP</td><td>N</td><td>PWM output for sharpness level control.</td><td>H</td></tr>
<tr><td>12</td><td>VNR</td><td>N</td><td>VNR (ON/OFF) output.</td><td>H</td></tr>
<tr><td>13</td><td>Y/C SW</td><td>N</td><td>Video mode output NORMAL → L , S-VIDEO → H</td><td></td></tr>
<tr><td>14</td><td>TONE/CONV</td><td>N</td><td>PWM output for convergence and sound quality level control.</td><td>H</td></tr>
<tr><td>15</td><td>HS</td><td>I</td><td>Horizontal sync. count input for receiving the tuner. H-SYNC is counted with the cycle of 1 msec, and when the 12 to 18 state is counted amount to 8, the system decides that a station exists, and when the other state is counted amount to 6, the system decides that a station not exists.</td><td></td></tr>
<tr><td>16</td><td>AC CLK</td><td>I</td><td>AC clock detection input. Use for detecting the AC power OFF. (Reset is generated when no AC clock is supplied for 100 msec.)</td><td></td></tr>
<tr><td>17</td><td>A MUTE</td><td>O</td><td>Audio mute output. when selecting MUTE mode, switching input and turning power ON/OFF, AUDIO MUTE is output.</td><td>H</td></tr>
<tr><td>18</td><td>TXT BLK</td><td>I</td><td>Not used.</td><td></td></tr>
<tr><td>19</td><td>RGB SW</td><td>N</td><td>Switching input of RGB input signal .
H:Connect to the external RGB side , L:Connect to the TELETEXT side</td><td></td></tr>
<tr><td>20</td><td>CE</td><td>N</td><td>At the chip enable of PD0012A serial transfer, set to H.
● Function of PD0012A
① TV SYSTEM output
<table>
<tr><th>Pin of PD0012A
System</th><th>Pin 4</th><th>Pin 5</th><th>Pin 6</th><th>Pin 7</th><th>Pin 8</th></tr>
<tr><td>B / G</td><td>L</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>D / K</td><td>L</td><td>H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>L'</td><td>H</td><td>H</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>I</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>M</td><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table>
② COLOR SYSTEM output (Manual mode output)
<table>
<tr><th>Pin of PD0012A
System</th><th>Pin 10</th><th>Pin 11</th><th>Pin 12</th></tr>
<tr><td>PAL</td><td>H</td><td>H</td><td>H</td></tr>
<tr><td>SECAM</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>NTSC</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>NTSC 4.43</td><td>L</td><td>H</td><td>H</td></tr>
</table>
<table>
<tr><th>Pin of PD0012A
Trap</th><th>Pin 13</th><th>Pin 14</th></tr>
<tr><td>PAL</td><td>H</td><td>L</td></tr>
<tr><td>SECAM</td><td>L</td><td>H</td></tr>
<tr><td>NTSC</td><td>H</td><td>H</td></tr>
<tr><td>NTSC 4.43</td><td>H</td><td>L</td></tr>
</table>
</td><td>H</td></tr>
</table>

<table>
<tr><th>No.</th><th>Pin Name</th><th>I/O</th><th colspan="2">Function</th><th>Active</th></tr>
<tr><td>20</td><td>CE</td><td>N</td><td colspan="2">② COLOR SYSTEM output (Auto mode output)
<table>
<tr><th>Pin of PD0012A
System</th><th>Pin 10</th><th>Pin 11</th><th>Pin 12</th></tr>
<tr><td>PAL</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>SECAM</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>NTSC</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>NTSC 4.43</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>B / W</td><td>L</td><td>L</td><td>L</td></tr>
</table>
<table>
<tr><th>Pin of PD0012A
Trap</th><th>Pin 13</th><th>Pin 14</th></tr>
<tr><td>PAL</td><td>H</td><td>L</td></tr>
<tr><td>SECAM</td><td>L</td><td>H</td></tr>
<tr><td>NTSC</td><td>H</td><td>H</td></tr>
<tr><td>NTSC 4.43</td><td>H</td><td>L</td></tr>
<tr><td>B / W</td><td>L</td><td>L</td></tr>
</table>
Note:
For judgment, refer to pin 47 and pin 48 .</td><td></td></tr>
<tr><td>21</td><td>SCL</td><td>N</td><td>I²C serial transmission clock.</td><td rowspan="2">Use for the TEXT and EEPROM.</td><td></td></tr>
<tr><td>22</td><td>SDA</td><td>I/N</td><td>I²C serial data input/output.</td><td></td></tr>
<tr><td>23</td><td>IDENT</td><td>N</td><td colspan="2">Ident for IM bus transmission. Use for control the NICAM decoder.</td><td></td></tr>
<tr><td>24</td><td>SIN</td><td>I</td><td>Serial data input.</td><td rowspan="3">Use for PLL EXP IC (PD0012A) and IM bus.</td><td></td></tr>
<tr><td>25</td><td>CLK</td><td>N</td><td>Serial clock.</td><td></td></tr>
<tr><td>26</td><td>SOUT</td><td>N</td><td>Serial data output.</td><td></td></tr>
<tr><td>27</td><td>CNVSS</td><td></td><td colspan="2">Connect to VSS.</td><td></td></tr>
<tr><td>28</td><td>NC</td><td>O</td><td colspan="2">Timing output . (Not used.)</td><td></td></tr>
<tr><td>29</td><td>RESET</td><td>I</td><td colspan="2">System reset. Reset is done by applying L for more than 0.95 μsec (when OSC=4.19MHz).</td><td>L</td></tr>
<tr><td>30</td><td>XIN</td><td>I</td><td colspan="2" rowspan="2">Input/output terminal of the main clock generating circuit.
Connect the ceramic resonator of 4.19MHz.</td><td></td></tr>
<tr><td>31</td><td>XOUT</td><td>O</td><td></td></tr>
<tr><td>32</td><td>VSS</td><td></td><td colspan="2">GND.</td><td></td></tr>
<tr><td>33</td><td>4051C</td><td>O</td><td colspan="2" rowspan="3">A, B and C terminal output of the multiplexer IC (MC14051BCP) . For convergence, sound quality and switching PWM.
<table>
<tr><th>Pin
Control</th><th>Pin 33</th><th>Pin 34</th><th>Pin 35</th></tr>
<tr><td>CLOSE</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>CONV.B-V</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>CONV.B-H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>CONV.R-V</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>CONV.R-H</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>BALANCE</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>TREBLE</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>BASS</td><td>H</td><td>H</td><td>H</td></tr>
</table></td><td></td></tr>
<tr><td>34</td><td>4051B</td><td>O</td><td></td></tr>
<tr><td>35</td><td>4051A</td><td>O</td><td></td></tr>
<tr><td>36</td><td>S RST</td><td>O</td><td colspan="2">System reset output. H at approx. 4 sec after the power is ON, and L at the POWER is OFF.
Used for separating the TELETEXT bus.</td><td></td></tr>
<tr><td>37</td><td>INP2</td><td>O</td><td colspan="2" rowspan="3">Input switching signal output.
<table>
<tr><th>Pin
Function</th><th>Pin 37</th><th>Pin 38</th><th>Pin 39</th></tr>
<tr><td>TUNER</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>AV 1</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>AV 2</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>AV 3</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>AV 4</td><td>H</td><td>*</td><td>*</td></tr>
</table></td><td></td></tr>
<tr><td>38</td><td>INP1</td><td>O</td><td></td></tr>
<tr><td>39</td><td>INP0</td><td>O</td><td></td></tr>
<tr><td>40</td><td>RELAY</td><td>O</td><td colspan="2">Power supply relay control output. ON → L , OFF → H</td><td>L</td></tr>
<tr><td>41</td><td>V MUTE</td><td>I</td><td colspan="2">VIDEO MUTE output and blanking (no signal) detection input. Also used for auto power OFF.</td><td>H</td></tr>
<tr><td>42</td><td>NOT USED</td><td>O</td><td colspan="2">Not used.</td><td></td></tr>
<tr><td>43</td><td>CS
(CLOCK)</td><td>I</td><td colspan="2">Color system input. (refer to pin 47 (COL SYS1), pin 48 (COL SYS0).)
Lock selection signal of the chroma is hardware set and it correspond to software.
L → Lock selection signal of the chroma is locked.
H → Lock selection signal of the chroma is not locked.</td><td></td></tr>
<tr><td>44</td><td>Y. MUTE</td><td>O</td><td colspan="2">Y.MUTE</td><td>H</td></tr>
</table>

<table>
<tr><th>No.</th><th>Pin Name</th><th>I/O</th><th>Function</th><th>Active</th></tr>
<tr><td>45</td><td>AV1 SW</td><td>I</td><td>Pin 8 (switching voltage) input of EURO 21 PIN connector.
Input signal switch to AV – 1 by edge detection of H → L.
Input signal switch to TUNER by edge detection of L → H.</td><td>L ↓
H ↑</td></tr>
<tr><td>46</td><td>50 / 60</td><td>I</td><td>Field frequency input. Use for OSD display position. L : 50Hz , H : 60Hz</td><td></td></tr>
<tr><td>47</td><td>COR SYS1</td><td>I</td><td rowspan="2">Color system input. (at the auto mode.)
<table>
<tr><th>Pin / System</th><th>Pin 48</th><th>Pin 47</th><th>Pin 43</th></tr>
<tr><td>PAL</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>SECAM</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>NTSC</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>NTSC 4.43</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>B / W</td><td>*</td><td>*</td><td>H</td></tr>
</table></td><td></td></tr>
<tr><td>48</td><td>COR SYS0</td><td>I</td><td></td></tr>
<tr><td>49</td><td>STEREO</td><td>I</td><td rowspan="2">Broadcast format deciding input.
<table>
<tr><th>Pin / Format</th><th>Pin 49</th><th>Pin 50</th></tr>
<tr><td>STEREO/SAP</td><td>L</td><td>L</td></tr>
<tr><td>MONO/SAP</td><td>H</td><td>L</td></tr>
<tr><td>STEREO</td><td>L</td><td>H</td></tr>
<tr><td>MONO</td><td>H</td><td>H</td></tr>
</table></td><td>L</td></tr>
<tr><td>50</td><td>SAP</td><td>I</td><td>L</td></tr>
<tr><td>51</td><td>MTS1</td><td>O</td><td rowspan="2">MTS mode output.
<table>
<tr><th>Pin / MTS mode</th><th>Pin 52</th><th>Pin 51</th></tr>
<tr><td>MAIN/SAP</td><td>L</td><td>L</td></tr>
<tr><td>MAIN</td><td>H</td><td>L</td></tr>
<tr><td>SAP</td><td>L</td><td>H</td></tr>
<tr><td>MONO</td><td>H</td><td>H</td></tr>
</table></td><td>L</td></tr>
<tr><td>52</td><td>MTS0</td><td>O</td><td>L</td></tr>
<tr><td>53</td><td>TV-A</td><td>O</td><td>Audio mute output of TV.</td><td>L</td></tr>
<tr><td>54</td><td>TV-V</td><td>O</td><td>Video mute output of TV.</td><td>H</td></tr>
<tr><td>55</td><td>NOT USED</td><td>O</td><td>Not used.</td><td></td></tr>
<tr><td>56</td><td>ENB</td><td>O</td><td>PLL data enable. Use for output the serial data to PLL.</td><td>H</td></tr>
<tr><td>57</td><td>OUT</td><td>O</td><td rowspan="5">Video output for OSD.</td><td>H</td></tr>
<tr><td>58</td><td>I</td><td>O</td><td>H</td></tr>
<tr><td>59</td><td>B</td><td>O</td><td>H</td></tr>
<tr><td>60</td><td>G</td><td>O</td><td>H</td></tr>
<tr><td>61</td><td>R</td><td>O</td><td>H</td></tr>
<tr><td>62</td><td>VSYNC</td><td>I</td><td rowspan="2">Synchronizing signal input for OSD.</td><td>L</td></tr>
<tr><td>63</td><td>HSYNC</td><td>I</td><td>L</td></tr>
<tr><td>64</td><td>VDD</td><td>I</td><td>Apply +5V power supply.</td><td></td></tr>
</table>

10. HOW TO CLEAN

Jigs

Use the following for cleaning optical components such as lens, mirror and screen.

Name	Number
Cleaning cloth, MINIMAX	GED-009
Cleaning liquid, B4	GEM1004

Note: Wear gloves when holding optical components lest you should make fingerprints.

10.1 Method of Cleaning Lenses and Mirrors

1. Remove dust with an airbrush.
2. Apply some cleaning liquid to the cloth and wipe the dirt off with the cloth.
3. If the component is not so dirty, moisten it with breath and wipe it with the cloth.

Note: Wipe it softly lest you should scratch the lens.

10.2 Screen Cleaning

1. Apply the cleaning liquid to the above cloth or similar soft cloth and wipe the dirt off with the cloth.
2. Apply de-electrifier to the rear-surface or fresnellens side of the screen, or dust will stick on it.

Note:

(1) Apply no alcoholic liquid such as thinner and benzine to the front surface lest the black printing on the rear surface should come off.

(2) Use Ascetete-cloth tape, GYH1001, for sticking Fresnel lens and lenticular sheet together.

11. WIRING DIAGRAM

Reconnect any disconnected lead wires of the Projection monitor receiver.
Figs. 11 - 1 thru 11 - 4 show the important points for connection of the lead wires. You may find that they were connected differently. Be sure reconnect the lead wires as they were.

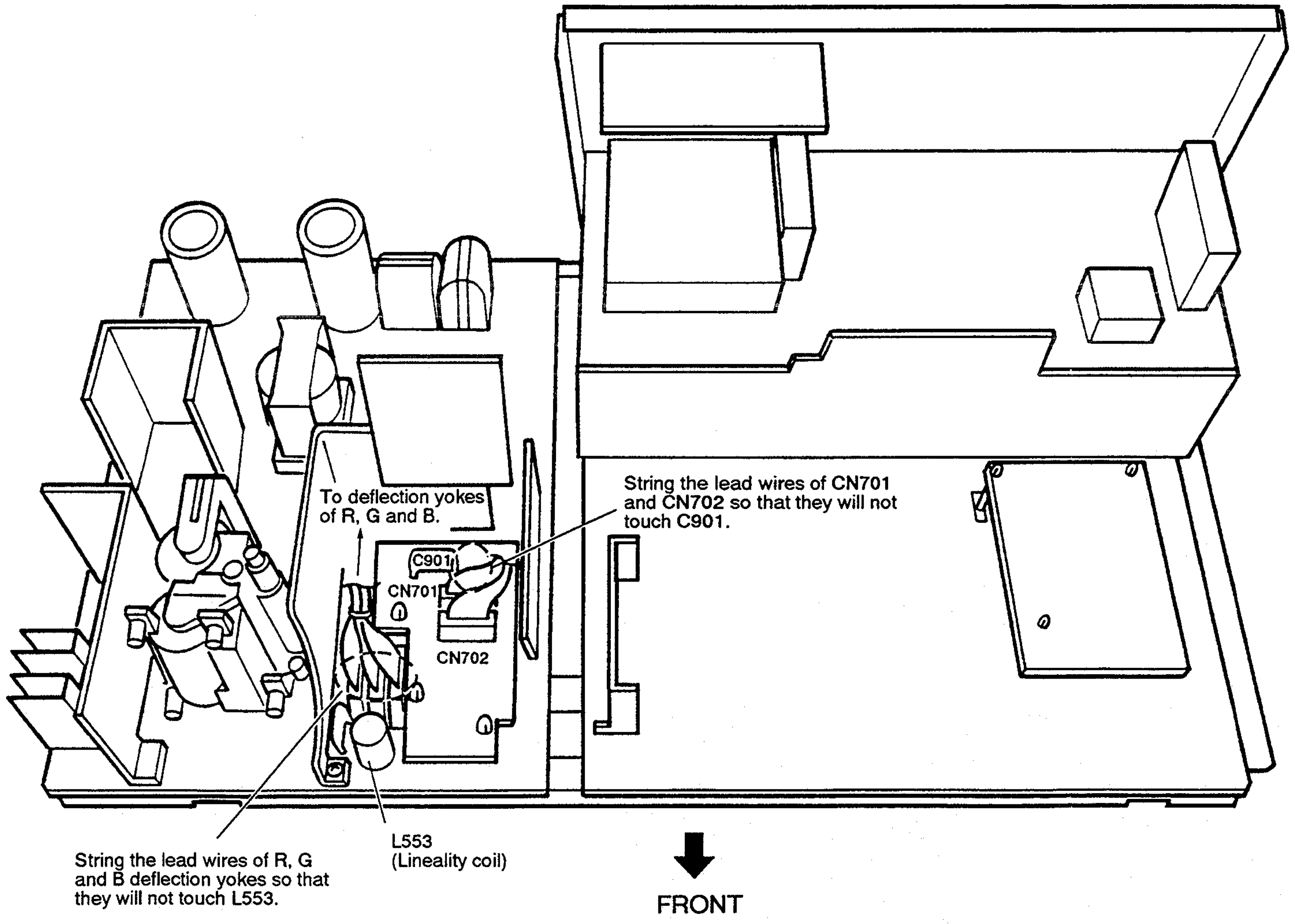

To deflection yokes of R, G and B.
C901
CN701
CN702
String the lead wires of CN701 and CN702 so that they will not touch C901.
String the lead wires of R, G and B deflection yokes so that they will not touch L553.
L553 (Lineality coil)
FRONT

Fig.11 - 1 Wiring diagram of the front

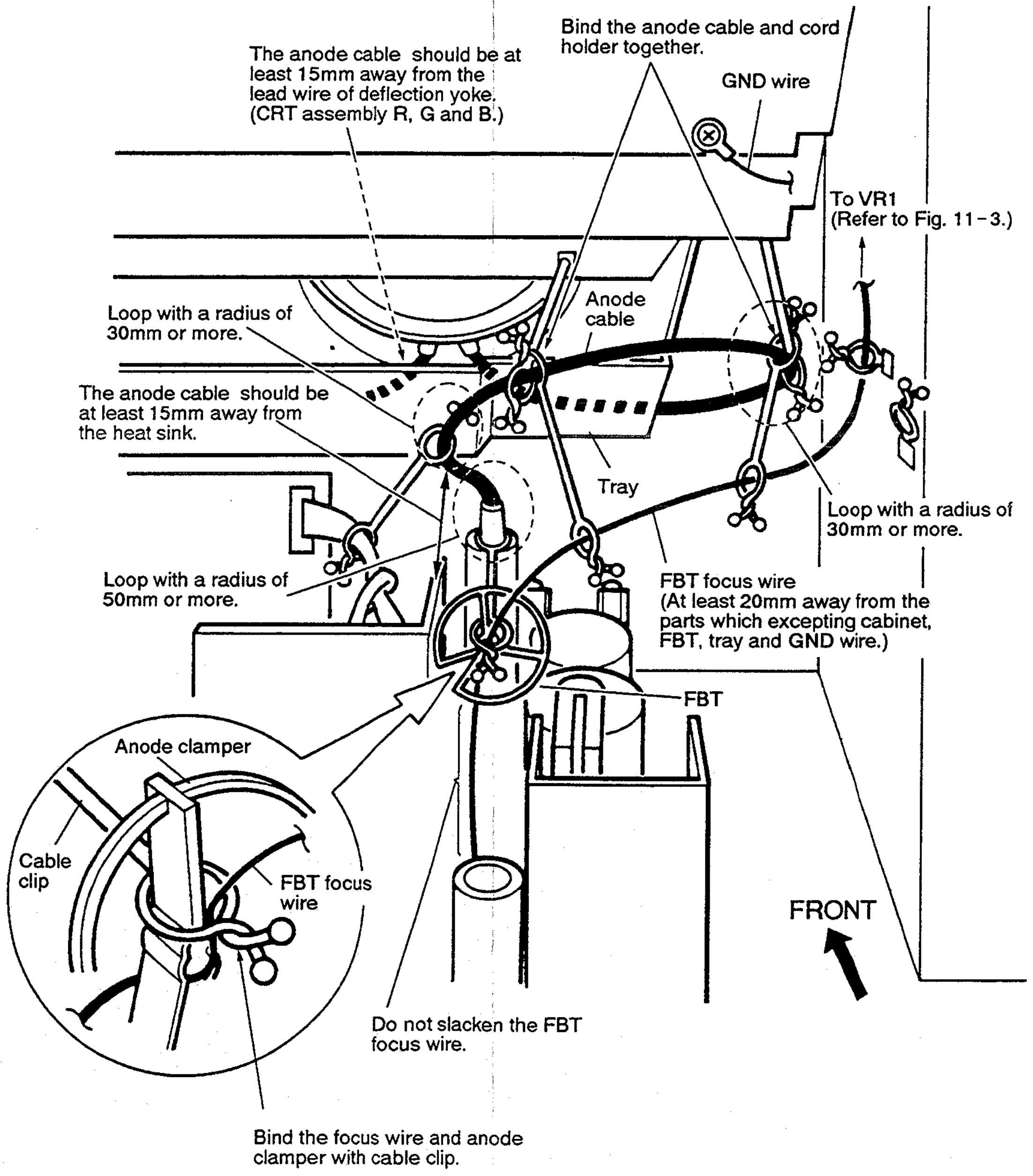

The anode cable should be at least 15mm away from the lead wire of deflection yoke. (CRT assembly R, G and B.)
Bind the anode cable and cord holder together.
GND wire
To VR1 (Refer to Fig. 11 - 3.)
Loop with a radius of 30mm or more.
Anode cable
The anode cable should be at least 15mm away from the heat sink.
Tray
Loop with a radius of 30mm or more.
Loop with a radius of 50mm or more.
FBT focus wire (At least 20mm away from the parts which excepting cabinet, FBT, tray and GND wire.)
FBT
Anode clamper
Cable clip
FBT focus wire
FRONT
Do not slacken the FBT focus wire.
Bind the focus wire and anode clamper with cable clip.

Fig. 11 - 2 Wiring diagram of the anode cable and FBT focus wire

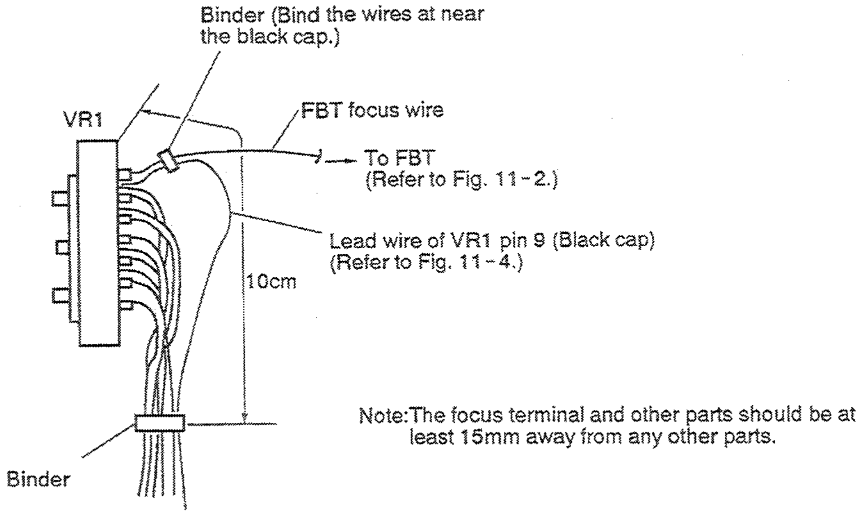

Binder (Bind the wires at near the black cap.)
VR1
FBT focus wire
To FBT (Refer to Fig. 11-2.)
Lead wire of VR1 pin 9 (Black cap) (Refer to Fig. 11-4.)
10cm
Note:The focus terminal and other parts should be at least 15mm away from any other parts.
Binder

Fig. 11-3 Wiring diagram of VR1 (focus variable resistor)

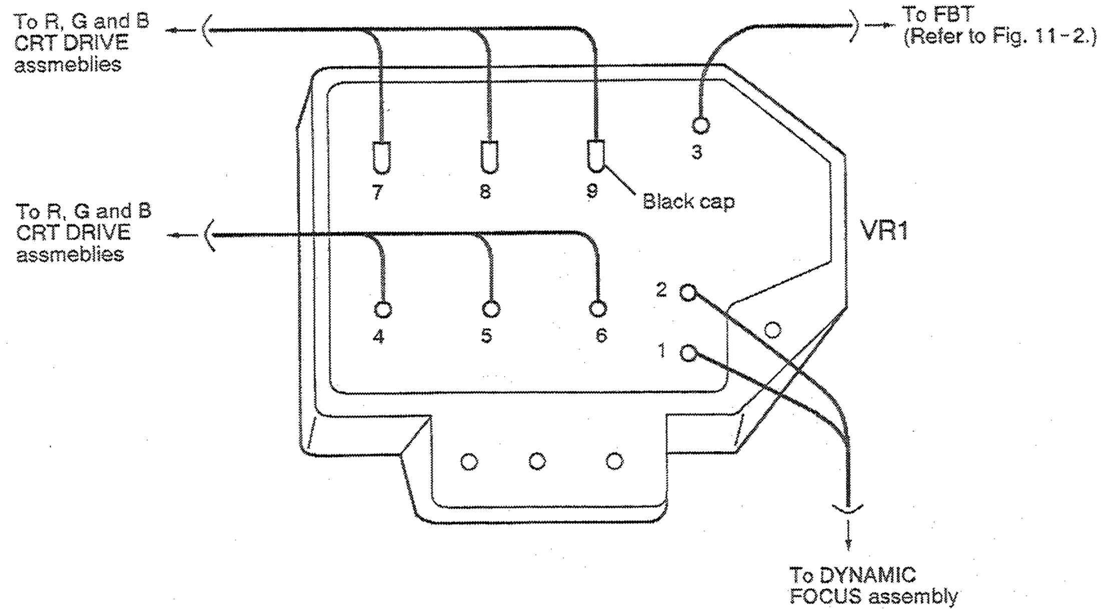
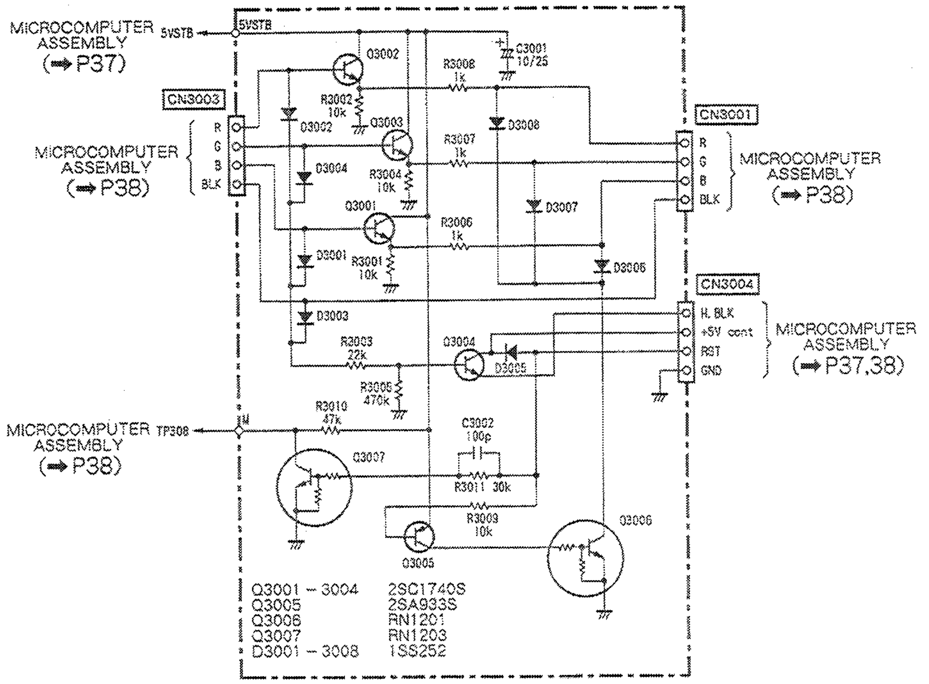

To R, G and B CRT DRIVE assmeblies
To FBT (Refer to Fig. 11-2.)
7
8
9
3
Black cap
To R, G and B CRT DRIVE assmeblies
VR1
2
4
5
6
1
To DYNAMIC FOCUS assembly

Fig.11-4 VR1 connections

12. MICROCOMPUTER-SUB ASEMBLY

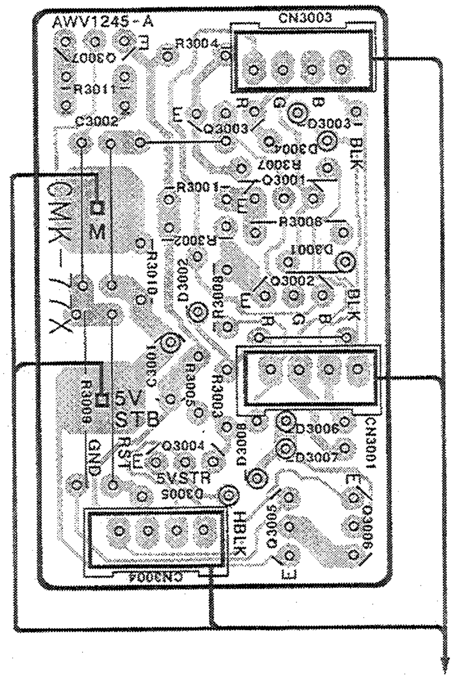
12.1 SCHEMATIC DIAGRAM

MICROCOMPUTER-SUB ASSEMBLY (AWV1245)


MICROCOMPUTER ASSEMBLY (➡P37)
5VSTB
CN3003
R
G
B
BLK
MICROCOMPUTER ASSEMBLY (➡P38)
Q3002
R3002 10k
D3002
Q3003
R3004 10k
D3004
Q3001
D3001
R3001 10k
D3003
R3003 22k
Q3004
D3005
R3005 470k
R3010 47k
MICROCOMPUTER TP308 ASSEMBLY (➡P38)
M
Q3007
C3002 100p
R3011 30k
R3009 10k
Q3005
Q3006
C3001 10/25
R3008 1k
D3008
R3007 1k
D3007
R3006 1k
D3006
CN3001
R
G
B
BLK
MICROCOMPUTER ASSEMBLY (➡P38)
CN3004
H. BLK
+5V cont
RST
GND
MICROCOMPUTER ASSEMBLY (➡P37,38)
Q3001 – 3004 2SC1740S
Q3005 2SA933S
Q3006 RN1201
Q3007 RN1203
D3001 – 3008 1SS252

12.2 P.C. BOARD PATTERN

MICROCOMPUTER-SUB ASSEMBLY (AWV1245)


AWV1245-A
CN3003
CMK-77X
5V STB
GND
RST
5VSTB
HBLK
BLK
CN3004
CN3001
M

MICROCOMPUTER ASSEMBLY (➡P55-56)

12.3 PCB PARTS LIST

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	Q3001-3004	TRANSISTOR	2SC1740S
	Q3005	TRANSISTOR	2SA933S
	Q3006	TRANSISTOR	RN1201
	Q3007	TRANSISTOR	RN1203
	D3001-3008	DIODE	1SS252
CAPACITORS			
	C3001	ELECTR. CAPACITOR	CEAS100M25
	C3002	CERAMIC CAPACITOR	CCCSL101J50
RESISTORS			
		ALL RESISTORS	RD1/8PM□□□J

PIONEER
The Art of Entertainment

PROJECTION MONITOR RECEIVER

SD-T5000

NTSC/PAL/SECAM

Operating Instructions

Thank you for purchasing the PIONEER Projection Monitor Receiver. If you have not read the precautionary instructions enclosed with these operating instructions, please do so before proceeding. After learning how to operate the Projection TV be sure to keep this manual handy for future reference.

While the official name of the product is the "PROJECTION MONITOR RECEIVER", for the sake of brevity the text refers to it as the "Projection TV".

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3 IMPORTANT NOTICE / IMPORTANT
3 LINE VOLTAGE SELECTOR
4 PRELIMINARY INSTRUCTIONS
5 FEATURES
6 INSTALLATION
6 OPERATING PRECAUTIONS
7 INSERTING BATTERIES IN THE REMOTE CONTROL UNIT
7 REMOTE CONTROL OPERATION RANGE
8 FRONT PANEL FACILITIES
10 SYSTEM CONNECTION DIAGRAM
12 ANTENNA CONNECTIONS
13 LOUDSPEAKERS
14 REMOTE CONTROL UNIT FACILITIES
17 TV CHANNEL SELECTION
21 SOUND AND VIDEO MODE SELECTION
23 MULTI-CHANNEL TV SOUND (MTS)
24 ADDITIONAL OPERATIONS
26 PICTURE AND SOUND ADJUSTMENT
27 HOW TO ALIGN COLOR CONVERGENCE
29 DPO ADJUSTMENT
30 AV MEMORY
31 SELECTING THE COLOR SYSTEM
32 VIDEO SYSTEM SETTING
33 STATIONS STORING
35 USING THE STATION LABEL FUNCTION
36 HOW TO RELABEL INPUT DISPLAYS
37 TELETEXT FUNCTIONS
44 TROUBLESHOOTING
45 CARE OF YOUR PROJECTION TV
45 TV CHANNEL SELECTION
48 SPECIFICATIONS

OPERATING PRECAUTIONS

DO NOT ALLOW STILL PICTURES OR PARTS OF PICTURES THAT DO NOT MOVE TO REMAIN ON THE SCREEN FOR AN EXTENDED LENGTH OF TIME. STILL IMAGES CAN ADVERSELY AFFECT YOUR PICTURE PROJECTION TUBES. SOME EXAMPLES OF STILL IMAGES ARE COMPUTERS, TELEVISION PROGRAMMING LOGOS AND VIDEO GAMES. IF STILL PICTURES CANNOT BE AVOIDED, REDUCE THE BRIGHTNESS AND CONTRAST LEVELS OF THE PICTURE TO MINIMIZE ANY DAMAGE THAT MIGHT OCCUR.

IMPORTANT NOTICE

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO WET LOCATIONS.

The model number and the serial number of this Projection TV are located on the rear panel.
Please write the serial number on the enclosed warranty card and keep it in a safe place for future reference.

NOTE:
There are no user serviceable parts inside the Projection TV.

WARNING: The apparatus shall not be exposed to dropping or splashing.

IMPORTANT

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

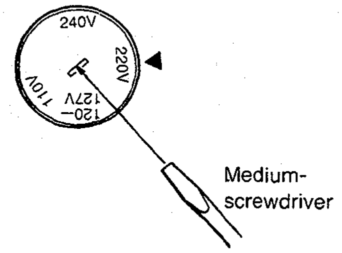
CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USERSERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

LINE VOLTAGE SELECTOR SWITCH

Only the multi-voltage model is provided with this switch.
Mains voltages in Saudi Arabia are 127V and 220V only. Never use this model at the 110V setting in Saudi Arabia.
You will find the VOLTAGE SELECTOR switch on the rear panel. Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet. If the voltage is not properly set, or if you move to an area where the voltage requirements differ, convert the VOLTAGE SELECTOR switch as follows.

VOLTAGE SELECTOR



Before converting disconnect the power cord.

1. Use a medium-size screwdriver.
2. Insert the screwdriver into the groove of the VOLTAGE SELECTOR switch and turn until it points to the voltage value of your area.

PRELIMINARY INSTRUCTIONS

WHERE TO PUT THE PROJECTION TV

LIGHTING

Bright lights or direct sunlight will dull the picture. Set the Projection TV so that the screen faces away from windows.

AIR CIRCULATION

Leave space for air to circulate behind the Projection TV. Keep away from curtains and other furnishings that could block ventilation.

HEAT DAMAGE

Damage may occur if you leave the Projection TV in direct sunlight or near a heater.

OPTIMUM VIEWING DISTANCE

3 to 7 m is the range recommended for viewing comfort.

POWER SOURCE

This Projection TV operates on AC 110 V/120-127 V/220 V/240 V, standard household voltage.

NEVER CONNECT THE PROJECTION TV TO OTHER THAN THE SPECIFIED VOLTAGE, OR TO DIRECT CURRENT.

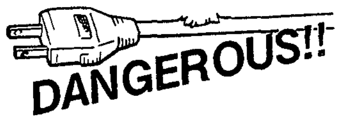
POWER OUTLET

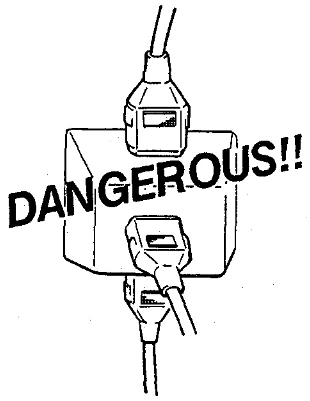
- A damaged cord or plug is a fire hazard. If you notice wear or damage, have it fixed by qualified service personnel.
- Plug directly into the wall socket. Do not use extension cords or other receptacles. Do not overload the outlet; it may cause a fire hazard.

NOTE:

- *Never remove the back cover of the Projection TV as this will expose you to dangerously high voltage and other hazards. If the set does not operate properly, unplug it and refer to page 44.*

- DANGEROUS





POWER-CORD CAUTION

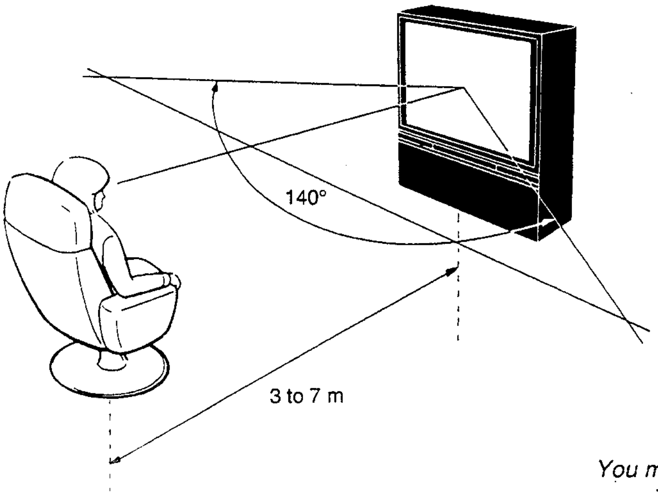
Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed in such a way that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord regularly. If you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

FEATURES

Wide Viewing Range Screen

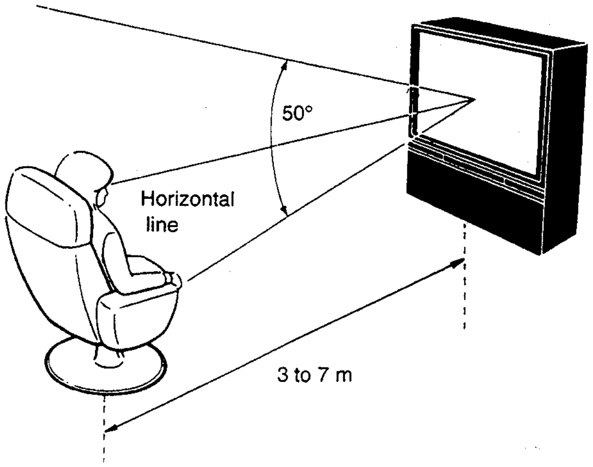
- 140° Horizontal Viewing Angle and 50° Vertical Viewing Angle.

Horizontal Viewing Angle



Vertical Viewing Angle

Watch from at least 3 meters away from the screen.
(Optimum viewing distance is 3 to 7 meters.)



You may sometimes see double images or rainbowlike effects if you view from outside of the recommended area shown here.

Amazingly Bright Picture

- New, highly efficient lens system.
- High-power picture tubes employ advanced anode stabilization circuitry.
- Picture realized by newly developed phosphorescent screen for the picture tubes.

Much Greater Contrast with Extended Gradation

- True black reproduction under all conditions, owing to a Black Level Correction Circuit.

Microcomputerized Dynamic Picture Optimizer (DPO)

- DPO (Dynamic Picture Optimizer) circuit detects room light and optimizes the TV picture accordingly.

Equipped with a VNR (Video Noise Reduction) system for reducing noise on the screen

AV Memory

- After adjusting the picture and sound quality, you can store your settings in "AV memory". Four AV memory settings can be stored and recalled.

Video mode selection feature for the EURO connectors

- You can choose the video input mode of the Projection TV's EURO connectors: S (Separate) video or composite video inputs.

Table of pages feature (TOP)-compatible Teletext system in addition to FASTEXT and STANDARD TELETEXT.

- You can enjoy Teletext service without the need for any additional adaptors.

Multisystem Video

- This projection TV incorporates PAL, SECAM, NTSC and 4.43NTSC color systems and B/G, I, D/K, L, L' and M tuner reception systems.

Multisystem Tuner Stereo Mode

- NICAM DIGITAL Stereo (B/G, I)
- CCIR 2 Carrier Analog Stereo (B/G)
- MTS (M)

TV Station and AV Input Labeling

INSTALLATION

ANTENNA CONNECTION

Connect to an outdoor antenna or centralized antenna terminal. (See page 12 for details.)

MOUNTING

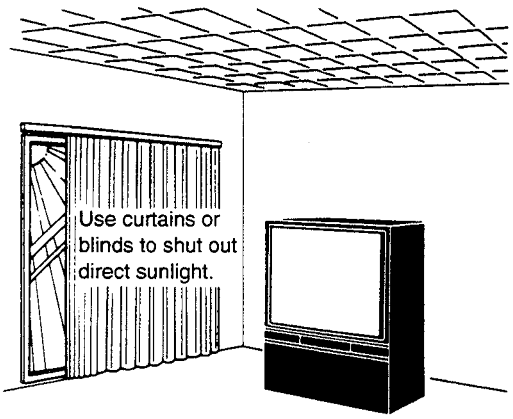
The Projection TV is designed to be placed on the floor or on a sturdy platform. The mounting surface should be flat and steady.

INSTALLATION PRECAUTIONS:

Place of Installation

- When the Projection TV is operating, it is cooled by air-flow through ventilation holes in the rear and bottom. Therefore, avoid placing it in a location where the cooling air-flow is hindered (e.g. against a wall).
- Avoid places subject to extremely high temperatures or humidity, or to temperatures of 5°C or lower. Also avoid dusty places.
- Do not set the Projection TV in an unstable location (such as on a shaky or tilted platform).
- When setting the Projection TV on a floor made of soft material, make sure that the floor is not damaged by the weight of the Projection TV.
- If the room temperature suddenly rises (or if the Projection TV is moved from a cool place to a hot place), condensation may form on the lenses, resulting in picture distortion or color fading. If this occurs, simply wait a while (with the ⏻ switch on) and the condensation will disappear.

Downward spot lights or fluorescent lights in an overhead "Honeycomb" prevent direct illumination of the screen.


Use curtains or blinds to shut out direct sunlight.

Cover shiny surfaces (floor and walls) with nonreflective materials (carpet, rugs, wallpaper, etc.).

OPERATING PRECAUTIONS

Keep away from magnetic fields

The picture may be distorted if strong magnetic fields are nearby. External loudspeakers should be set at least 60 cm away from the Projection TV. Electric fans and other motor driven appliances and toys may also be sources of magnetism.

When moving the Projection TV

Pull out the plug and move the Projection TV carefully. Be particularly careful not to bump or scratch the screen. To avoid damage to the caster wheels you may need to lift the Projection TV when going over irregular surfaces.

Install in a flat, steady place

Do not put the Projection TV on a surface that is tilted, unsteady or prone to shake or vibrate. A shaky or slanted platform is dangerous.

Adjust room illumination

Excessively bright or dim lighting may strain your eyes. Draw the curtains if necessary to shut out direct sunlight.

When not using the Projection TV for a long time

For safety, unplug the power cord when leaving the Projection TV turned off for a long period of time.

Condensation and picture blurring

- You may see a blurred picture if the Projection TV is moved from a cool to a warm location or if room temperature rises very rapidly. This occurs when moisture from the air condenses on the optical parts.
- The picture will return to normal if you leave the Projection TV turned off for 1 or 2 hours, before using it.
- A gradual change in temperature can prevent dew formation.

A word about still pictures

- Do not project a still picture on your Projection TV for a long period of time.
  (For example: when using your Projection TV for video games, displaying a test pattern, monitoring your personal computer, or while playing back video discs.) This can adversely affect Projection TV's CRT. If this cannot be avoided, reduce the contrast of the picture in order to minimize any damage which might occur.

MAINTENANCE OF EXTERNAL SURFACES

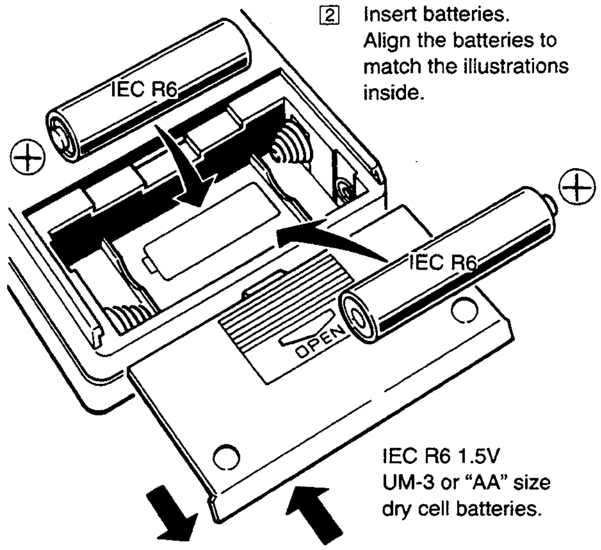
- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleaner diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

INSERTING BATTERIES IN THE REMOTE CONTROL UNIT

You will find the remote control unit packed inside the Projection TV box. Open the remote control unit and insert the batteries. Follow the procedure below:

1. Open the battery compartment on the rear of the remote control unit. Press down with your thumb while sliding the lid outward.
2. Note the polarity (+ and –) markings in the case. Insert the supplied batteries so that they match the markings.
3. Close the lid by sliding it back in until it clicks into place.

INSERTING BATTERIES



[2] Insert batteries. Align the batteries to match the illustrations inside.

IEC R6 1.5V UM-3 or "AA" size dry cell batteries.

[1] Open by pressing with your thumb while sliding outward.

[3] Close the lid by sliding it back into place.

Incorrect use of batteries may lead to leakage or rupture.
Always be sure to follow these guidelines:

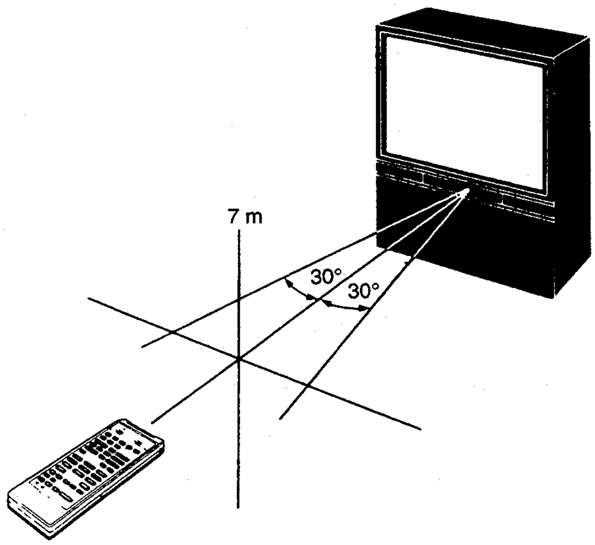
A.
Always insert batteries into the battery compartment correctly matching the positive + and negative – polarities, as indicated inside the compartment.

B.
Never mix new and used batteries.

C.
Batteries of the same size may have different voltages, depending on their type. Do not mix different types of batteries.

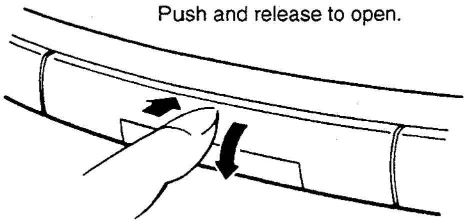
REMOTE CONTROL OPERATION RANGE

- Point the remote control unit toward the front of the Projection TV when you press any of the control buttons.
- The remote control unit should be effective at distances of up to about 7 meters from the Projection TV and at angles of up to about 30 degrees from a line perpendicular to the front panel.
- Furniture and other obstacles may block the infrared light beam so that it cannot reach the sensor on the Projection TV's front panel.
- If there is no response even when the remote control is used directly in front of the Projection TV, the dry cell batteries may need replacement.
- Performance of the remote control unit is a adversely affected in the presence of strong fluorescent light. Keep such lights away from the sensor window in particular.



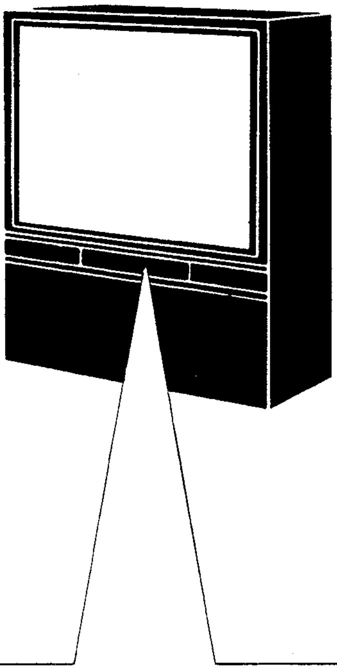
FRONT PANEL FACILITIES

A flip-down door conceals the control panel. Push gently and release to open the door.
To close the door, lift it back up into place.


Push and release to open.

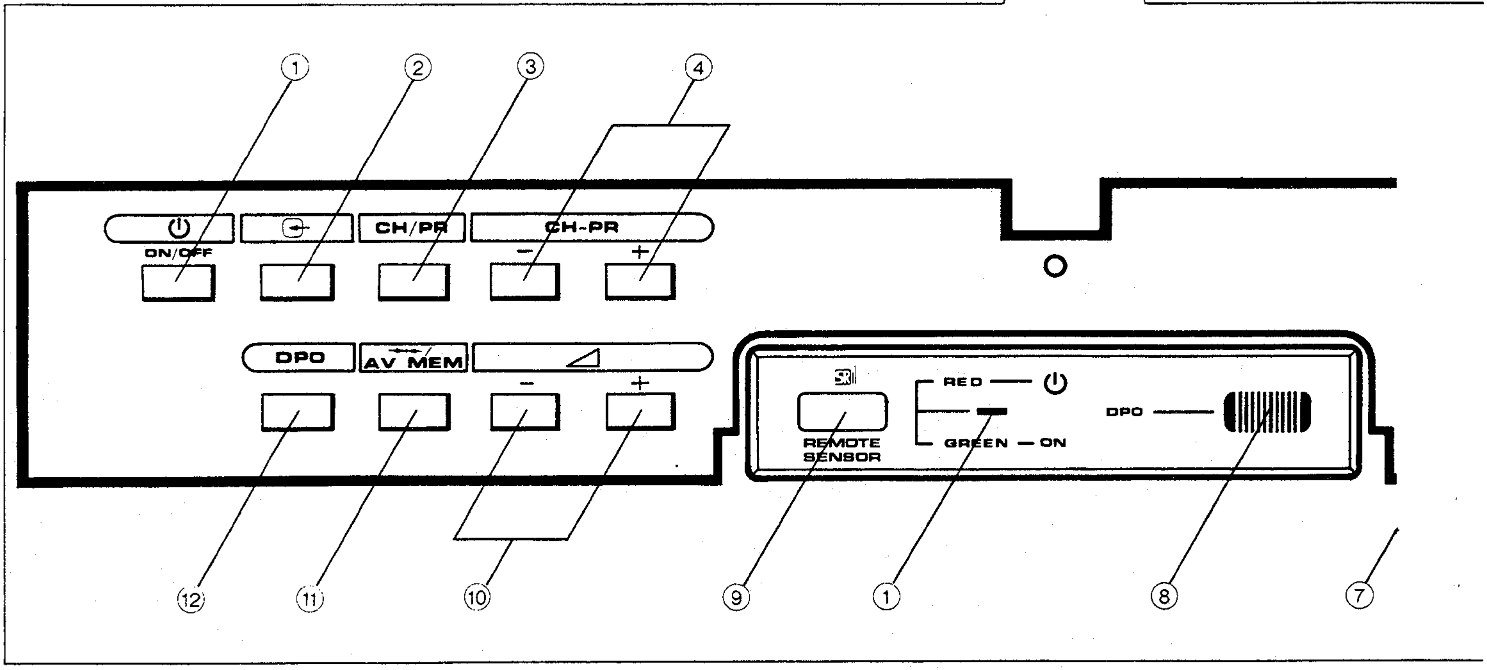
NOTE:

- *If you accidentally pull the door open, it may not shut properly. Push in when shutting the door to restore it to normal operation.*



Control Panel

- Use the remote control unit to operate most functions. See pages 14 to 25.


①
②
③
④
ON/OFF
CH/PR
CH-PR
−
+
DPO
AV MEM
−
+
REMOTE SENSOR
RED
GREEN — ON
DPO
⑫
⑪
⑩
⑨
①
⑧
⑦

Attention

The Projection TV will not function properly in the following cases:

- Lightning storms.
- High static electricity environment.
- Poor voltage regulation in the power source.

If the Projection TV does not operate properly, reset it as follows.

① Unplug from the power supply for approximately 1 minute.
② Plug the power cord in again to reset it.

Some memorized modes such as the last memorized mode may be erased when resetting the Projection TV.

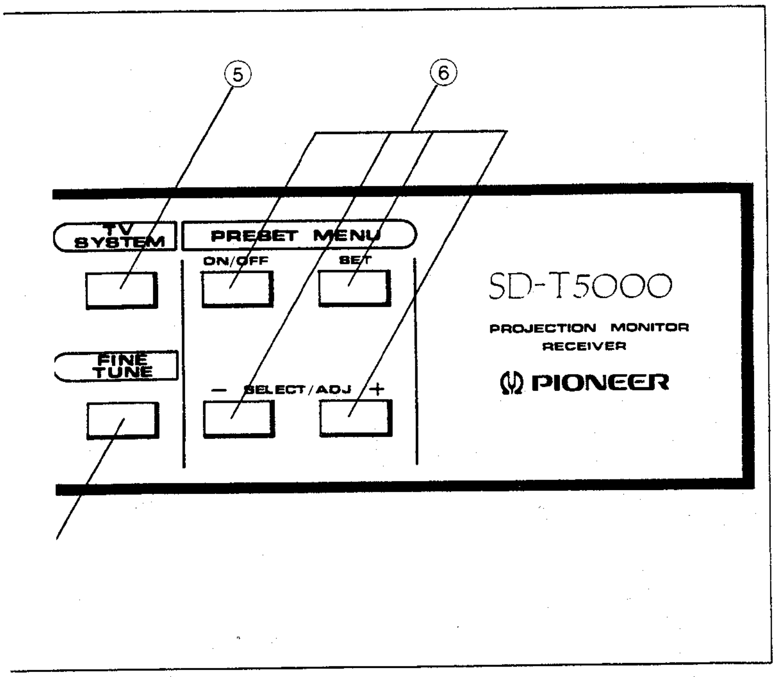
FRONT PANEL FACILITIES

① ⏻ (STANDBY) OFF/ON Button
Press once to turn on the power (the indicator turns green). Press again, to set to standby mode (the indicator turns red). This unit is equipped with an Auto STANDBY circuit, eight minutes after the input signal ceases to be supplied (for example, the TV channel being received stops broadcasting), the set will automatically switch to stand-by mode.

② ⇥ (Input Selector) Button
Press to select INPUT source. INPUT sources will change as follows: TV, AV-1, AV-2, AV-3 or AV-4. Even when TV, AV-2, AV-3 or AV-4 is selected, if a switching voltage is received from AV-1, the input selector switches to AV-1.

③ CH/PR (Channel/Program) Button
Press to switch between the channel and the program number tuning functions.

④ CH-PR (Channel-Program) +/− Buttons
Press up (+) or down (−) to tune to a higher or lower channel or program. Only those programs in STATION STORING can be tuned in by this method. For details, see page 17.



⑤ TV SYSTEM MODE Button
To select TV system, B/G, D/K, L, L', I or M during TV reception and to select channel table.

⑥ PRESET MENU Buttons
These buttons are used to perform the following presetting operations: color convergence adjustment, AV memory storing, DPO adjustments, Video mode settings, Color system setting, Sound system setting and TV stations storing. For details, refer to the description of each function.
ON/OFF: Press to turn the operation menu on and off. When the operation menu is turned on, CONVERGENCE, AV MEMORY, DPO BASE, VIDEO SYSTEM, COLOR.SYSTEM, SOUND SYSTEM and STATIONS STORING will appear on the screen.
SELECT/ADJ: Press to select or adjust each of the above operations. The selected item will turn red on the screen.
These buttons are used as channel select buttons when the stations storing operation is engaged.
SET: Press to store the setting after adjusting or selecting an item.

⑦ FINE TUNE Button
Press to turn the fine tuning function on and off. Press the PRESET MENU SELECT/ADJ +/− buttons after turning on the fine tuning function if you wish to finely adjust the tuning.

⑧ DPO SENSOR
This sensor detects ambient lighting for the DPO (Dynamic Picture Optimizer) circuit which optimizes the TV picture accordingly.

⑨ REMOTE CONTROL SENSOR
This sensor picks up infrared signals from the remote control unit.

⑩ ⊿ (Volume) Buttons
Press the plus (+) or minus (−) button to raise or lower the volume.

⑪ AV-MEM audio/video (Standard/AV Memory) Button
Press to switch between the standard (STD) picture/sound settings and the AV MEMORY 1, 2, 3 and 4 settings which have been input with the PRESET MENU.

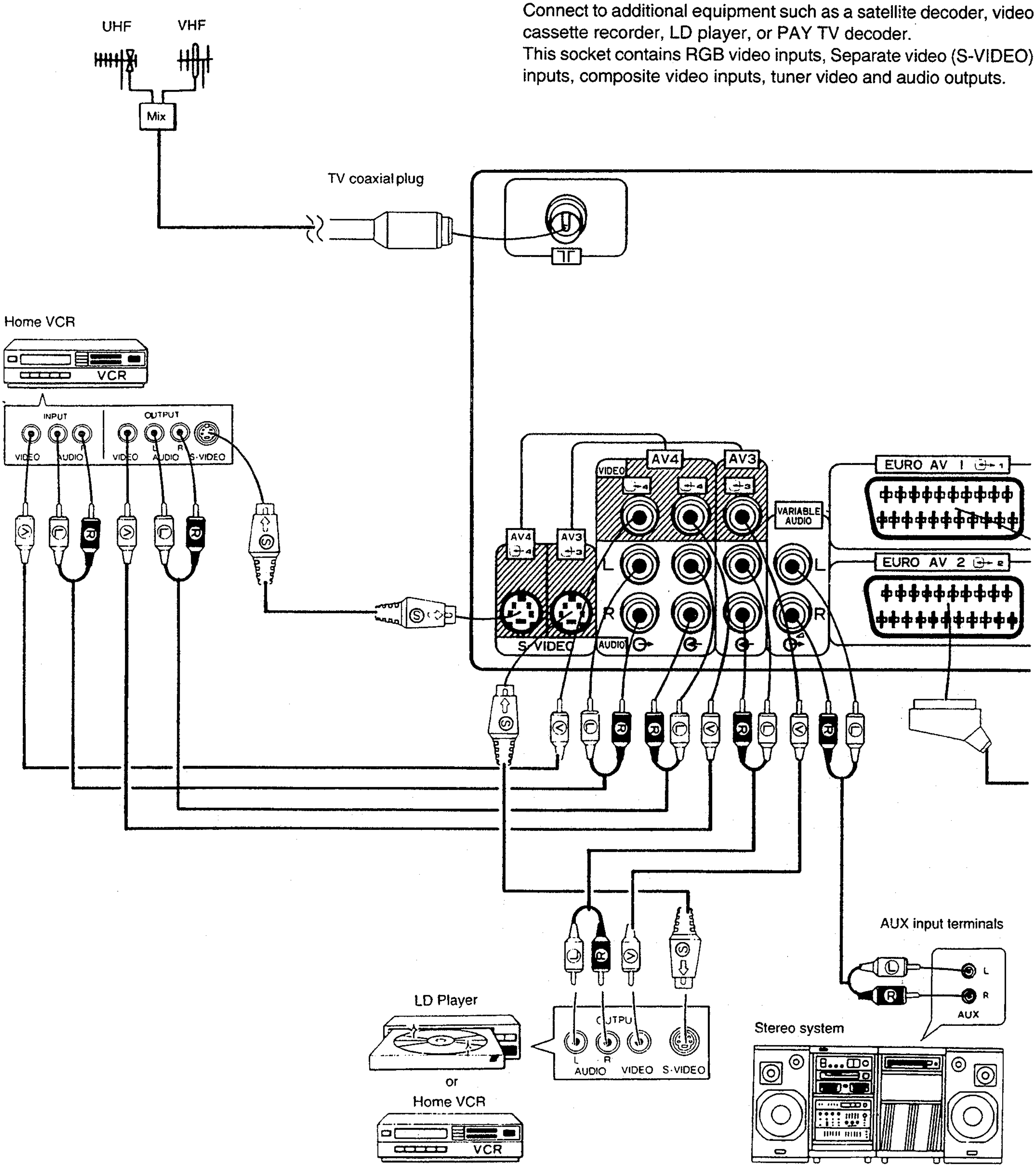
⑫ DPO (Dynamic Picture Optimizer) Button
You can turn the DPO on or off as desired. When the DPO is on, it automatically adjusts the picture to compensate for room illumination.
For details, see page 29.

SYSTEM CONNECTION DIAGRAM

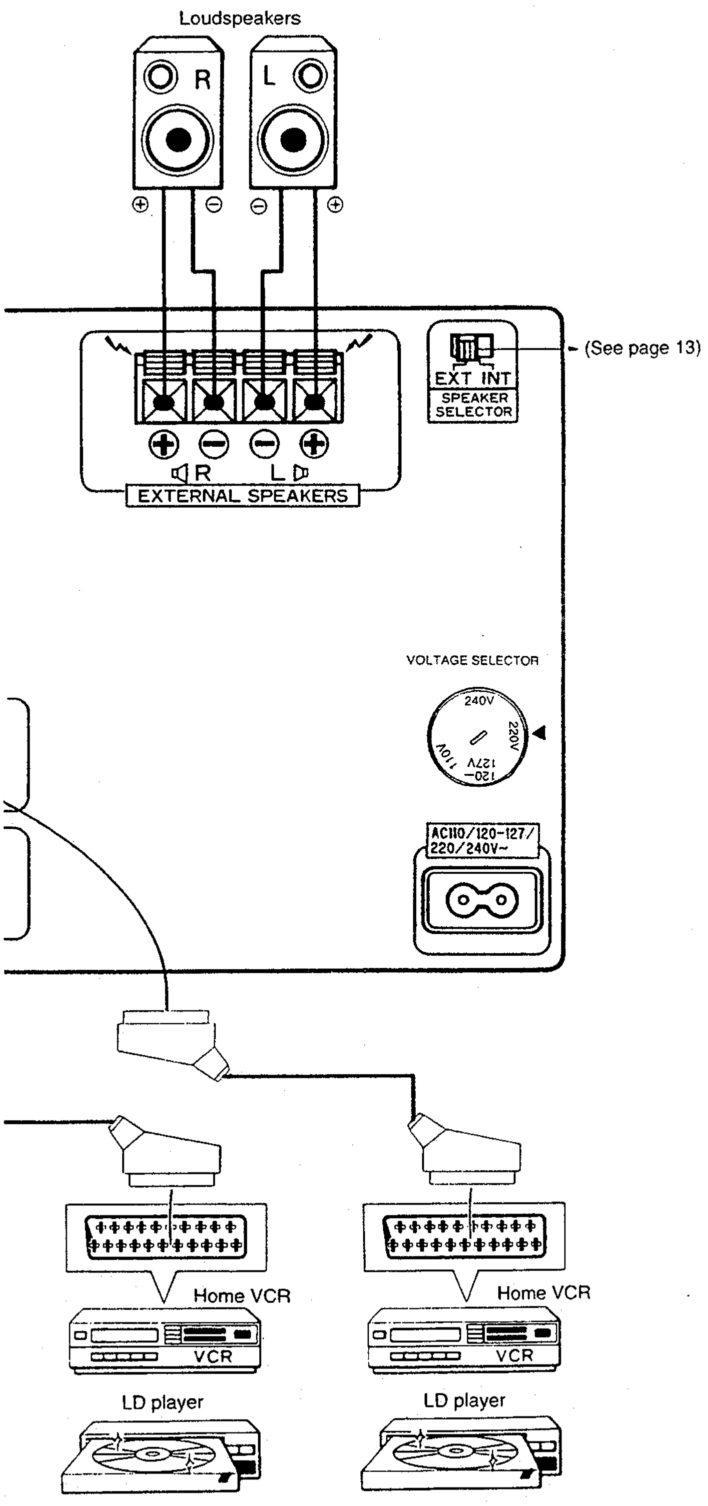
- Turn off all the components before making connections.
- Refer to the operating instructions for your video cassette recorder, LD player and other equipment for details on how to make connections.

⊤ (Antenna input) Terminal
Connect to 75 Ω antenna cable.

EURO AV 1 ⊖→1 socket
(For TV recording and playback)
Connect to additional equipment such as a satellite decoder, video cassette recorder, LD player, or PAY TV decoder.
This socket contains RGB video inputs, Separate video (S-VIDEO) inputs, composite video inputs, tuner video and audio outputs.


UHF
VHF
Mix
TV coaxial plug
⊤
Home VCR
VCR
INPUT
OUTPUT
VIDEO
AUDIO
L
R
S-VIDEO
AV4
AV3
VIDEO
VARIABLE AUDIO
EURO AV 1
EURO AV 2
L
R
S-VIDEO
AUDIO
AUX input terminals
L
R
AUX
LD Player
or
Home VCR
VCR
OUTPUT
L
R
AUDIO
VIDEO
S-VIDEO
Stereo system

SYSTEM CONNECTION DIAGRAM



AC110/120—127/220/240V~ POWER TERMINAL

Connect to a Localised power outlet (I.E. wall socket), using a power cord.

EURO AV 2 ⊖-2 socket

(For AV-1, AV-3 and AV-4 recording and AV-2 playback)

Connect to additional equipment such as a satellite decoder, video cassette recorder, LD player, or PAY TV decoder.

This socket contains Separate video (S-VIDEO) inputs, composite video inputs, video and audio outputs for monitoring.

AV3 ⊖-3 terminals (for playback)

Connect to additional equipment such as a video cassette recorder or LD player.

S-VIDEO (Separate-Video): If you attach additional equipment to this terminal, use an optional S-Video connection cord. (If both the RCA pin terminal and S-VIDEO terminals are connected at the same time, the RCA pin terminal input signal will be automatically cut off when equipment is plugged into this terminal.)

RCA pin (Video Input): Connect to the video output terminal of your equipment.

R/L ⊖- (Left and Right Inputs): Connect to the left and right channel output audio terminals of your equipment.

AV4 ⊖-4 terminals

Connect to additional equipment such as a video cassette recorder or LD player.

S-VIDEO (Separate-Video): If you attach additional equipment to this terminal, use an optional S-Video connection cord. (If both the RCA pin terminal and S-VIDEO terminals are connected at the same time, the RCA pin terminal input signal will be automatically cut off when equipment is plugged into this terminal.)

RCA pin ⊖-4 (Video Input): Connect to the video output terminal of your equipment.

R/L ⊖ (Left and Right Audio Inputs): Connect to the left and right channel output audio terminals of your equipment.

AV4 ⊖-4 terminals

RCA pin ⊖-4 (Video Output):

Connect to additional video equipment for monitoring video cassette recorder, for example.

R/L (Left and Right Audio Outputs):

Connect to audio inputs of additional video equipment or audio system.

⊖ terminals

(Left and Right Variable Audio Outputs)

Connect to the Audio auxiliary inputs of your Hi-Fi audio system. You can listen to the sound of the selected input video via your Hi-Fi system. These outputs are controlled by the volume, bass, treble and balance controls of the Projection TV.

NOTE:

- *Signals from these output jacks will be affected by AV memory, bass and treble tone adjustments using the —AV MEM button, SOUND button, ADJUST ◀, ▶ button.*

EXTERNAL SPEAKERS TERMINALS

(L : Left channel/ R: Right channel)

Connect to additional loudspeakers (purchased separately, see page 13)

SPEAKER SELECTOR SWITCH (EXT/INT)

To select which loudspeakers; internal or external, are used. (See page 13).

EXT (External): Output from the EXTERNAL SPEAKERS terminals.

Sound from the internal loudspeakers will be cut off.

INT (Internal): Output from the internal loudspeakers. Sound from the EXTERNAL SPEAKERS terminals will be cut off. Normally set switch to this position.

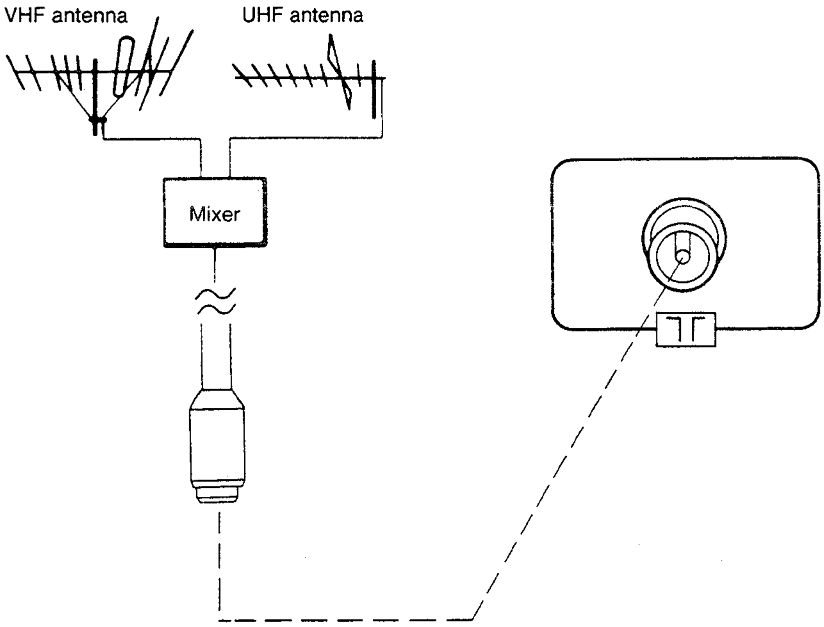
ANTENNA CONNECTIONS

A good color picture, good stereo sound and teletext operation depends on a good TV signal. To ensure the highest signal quality, choose an antenna that suits your reception area and have it properly installed. Ask your dealer for advice.
Of course, if you will be subscribing to cable or have a central antenna for your building, then you will not need an external antenna. However, proper connections from the TV signal source to your Projection TV are essential. Please refer to the instructions below.

USING THE ANTENNA CABLE CONNECTOR

The cable connector plugs into the Projection TV's antenna terminal. This unit is designed to connect to a 75 Ω coaxial cable using a TV coaxial plug.

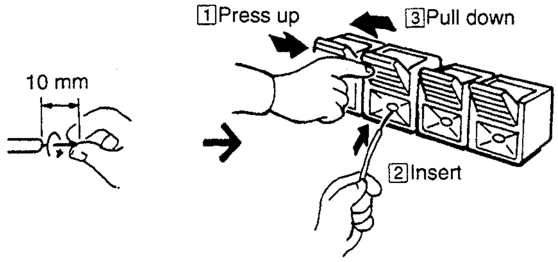
Connect the antenna cable connector into the ⅂Γ (antenna) terminal.



LOUDSPEAKERS

CONNECTING EXTERNAL LOUDSPEAKER WIRES

Turn off the power of the Projection TV.



Strip each wire so that about 10 mm is exposed. Twist the core.

Push the lever, insert the wire, and pull the lever down to lock the wire into place. Pull gently on the wire to check that it is securely connected.

Do this for each wire. Be careful to connect the right loudspeaker's plus and minus terminal wires to the "R" "+" and "–" terminals. Likewise, connect the left loudspeaker's plus and minus terminal wires to the "L" "+" and "–" terminals.

Precautions

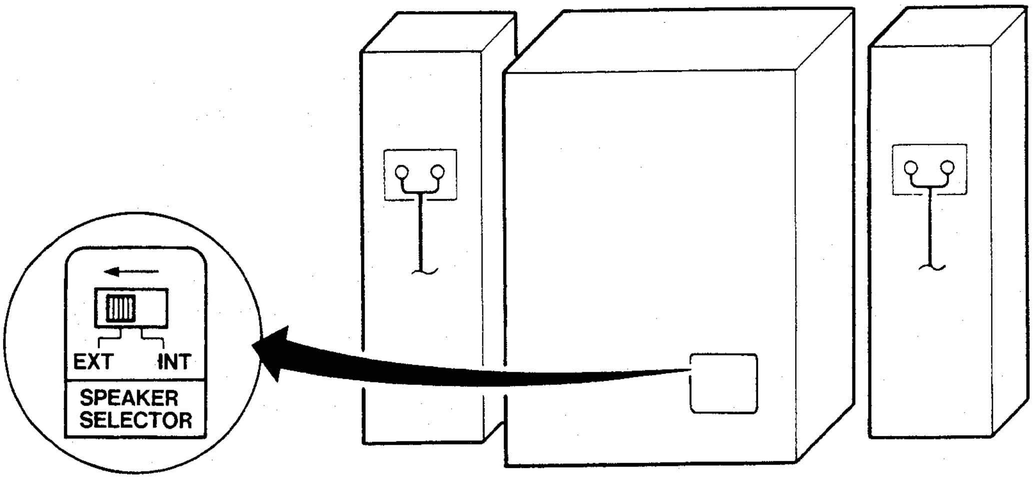
- Be sure that exposed wires do not protrude and touch each other.
- If you do not hear a normal stereo image when listening to a stereo program, it may be because the "+" and "–" connections are reversed for one of the external loudspeakers.
- Make sure that the right loudspeaker is connected to the "R" terminals and the left loudspeaker to the "L" terminals.
  Make sure that each loudspeaker's two wires are properly connected to the appropriate "+" and "–" terminals.

NOTES:

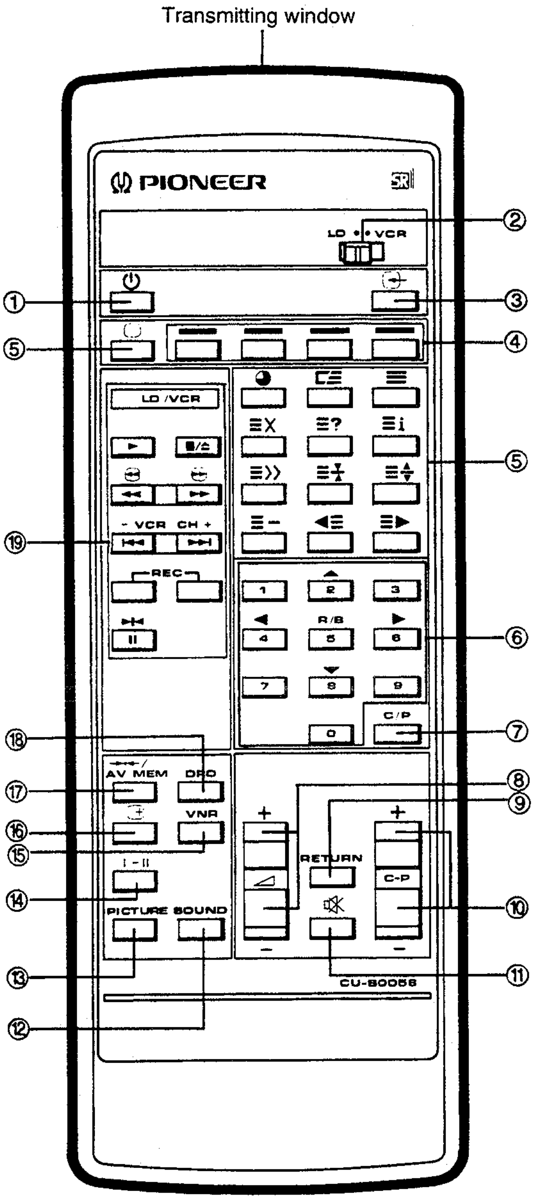
- *Use loudspeakers with an impedance rating of from 8 Ω to 16 Ω.*
- *Ordinary loudspeakers are not magnetically shielded and may disturb the picture if placed too close to the Projection TV. If you notice a problem, move the loudspeakers about 60 cm away from the Projection TV.*

SPEAKER SELECTOR SWITCH

Set this switch to the INT position if you will be listening to the built-in loudspeakers. If you have connected external loudspeakers (or if you will be listening through your stereo system), then you can turn off the built-in loudspeakers by setting the switch to the EXT position.



REMOTE CONTROL UNIT FACILITIES



① **Standby (⏻)**
Press to turn the Projection TV off.

② **LD .. VCR Switch**
(LaserDisc/Video Cassette Recorder)
To select the remote control function mode of the LD/VCR remote control buttons; either LD or VCR.

③ **Input Selector**
Press to select the external video source you wish to watch.

→TV - AV1 - AV2 - AV3 - AV4 ↩

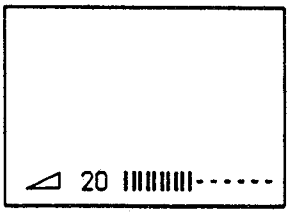
④ **Green, Yellow, Blue and Red Colored Buttons**
Press to select pages for the TOPTEXT or FASTTEXT. For details, see pages 38 to 40.

⑤ **Teletext Operation Buttons and Teletext Cancel (⌴) Button**
Press to select teletext operations.
Press the ⌴ button to cancel the Teletext function.

⑥ **Numeric Buttons (0 to 9)/ Power ON**
Press to select a TV channel or program directly. While Teletext is engaged, press to select Teletext page you wish to search. If the power is off, pressing these buttons turns the power on.
[2] (▲ : Up), [4] (◀ : To the left), [5](R/B : To select Red or Blue), [6] (▶ : To the right) and [8] (▼ : Down) buttons are used to adjust color convergence when the convergence adjustment mode is engaged.

⑦ **C/P (Channel/Program)**
Press to select either channel number or program number when tuning to a television broadcast.

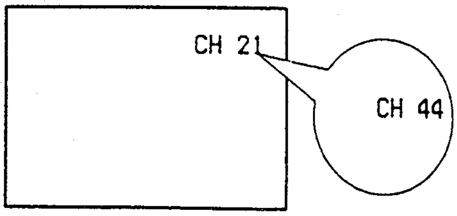
⑧ **◁ (Volume) +, – /ADJUST +, –**
Press the + button to increase the volume, and the – button to decrease it.
Volume adjustment will appear on the screen as numbers and a bar-graph. '63' indicates the maximum volume level. The display will disappear from the screen after 4 seconds.
Adjustments for SOUND items (bass, treble and balance) or PICTURE items (color, tint, contrast, brightness and sharpness) can also be made.
First press the SOUND or PICTURE button the necessary number of times to select the item to be set.
Then adjust the level using the (+) and (–) buttons.



NOTE:

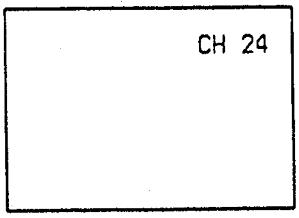
- *When using this button to control the volume after having used it for the Adjust function, make sure that the picture or sound adjustment display has disappeared.*
  This button will operate as the picture or sound adjustment as long as a picture or sound adjustment display appears on the screen.

⑨ **RETURN**
Press to switch between the current channel or program and the channel or program you were watching immediately before. This is useful, for example, if you wish to switch back and forth between two sporting events.



⑩ C-P (Channel - Program) +, –

Press the C-P (+) or C-P (–) to scan up or down among the channels or programs in stations storing.



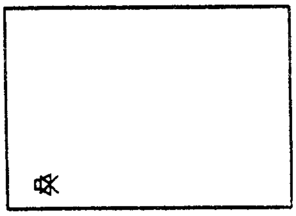
⑪ 🔇 (Mute)

Press to temporarily turn off the sound, and again to return to the previous volume level. This is useful, for example, when you get a phone call.

The 🔇 (Mute) display will appear in red while mute is engaged.

If the mute function is left on for over approx. 8 minutes, the function will be cancelled automatically, and the volume level will be reset to 0. 0.

The mute display will disappear from the screen when the mute is cancelled.



⑫ SOUND

Press to select the sound parameter to be adjusted.

→ 𝄢 (Bass) → 𝄞 (Treble) → ◭ (Balance) →

⑬ PICTURE

Press to select the picture parameter to be adjusted. The ◭ display will only appear on the screen if the NTSC or 4.43 NTSC color system is selected by pressing the PRESET MENU SELECT/ADJ button. (See preset menu operation "SELECTING THE COLOR SYSTEM".)

→ ❀ (Color) → ◭ (Tint) → ◑ (Contrast) →

← ⓘ (Sharpness) ← ☼ (Brightness) ←

⑭ I-II (TV Sound Mode)

Press to select the reception TV sound mode.

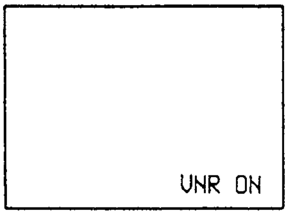
The switching sequence is as follows.

→ DUAL I → DUAL II →

← DUAL I/II ←

⑮ VNR (Video Noise Reduction)

You can turn VNR on or off as desired. When VNR is on, the noise on the screen is reduced. For details, see page 24.



⑯ ⊖ (Display)

Press once to display the current channel and/or other information on the screen.

⑰ —/AV MEM (Standard/AV Memory)

Press to switch between the standard (STD) picture/sound quality settings and your AV MEMORY 1, 2, 3 and 4 setting.

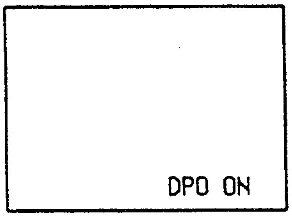
This button only recalls settings stored in AV MEMORY. To put the current picture/sound settings into AV MEMORY, use the control panel PRESET MENU buttons. For details, see page 30.

→ STANDARD → AV MEMORY 1 → AV MEMORY 2 →

← **DISPLAY OFF** ← AV MEMORY 4 ← AV MEMORY 3 ←
(Temporary memory mode)

⑱ DPO (Dynamic Picture Optimizer)

You can turn DPO on or off as desired. When DPO is on, it automatically adjusts the picture to compensate for room illumination. For details, see page 29.



⑲ LD/VCR (LaserDisc/Video Cassette Recorder) Operation Buttons

Press to operate a PIONEER LD player or video cassette recorder. For details, see page 16.

REMOTE CONTROL UNIT FACILITIES

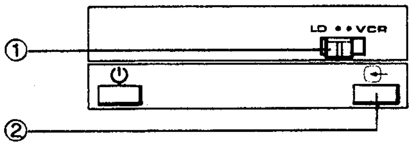
Control buttons for a PIONEER LD Player and VCR

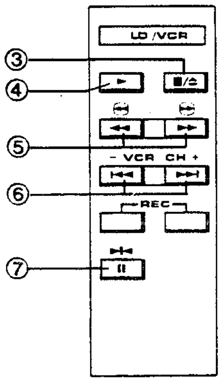
If your LD (LD Player) or VCR is a PIONEER model, your remote control unit can perform most basic operations without remote control code pressing.
The LD/VCR switch is used to select whether the remote control unit operation buttons will function as LD player or VCR control buttons.

LD Player Control

Turn on your LD player before operating.

① **Set the LD/VCR switch to LD.**
② **Press the ⊖ button repeatedly to set the input selector to the AV connector/terminal to which the LD player is connected.**
③ **Stop/Eject (■/⏏) button**
Press once to stop playback, twice to eject the disc.
④ **Play (▶) button**
Press to begin playback.
⑤ **Scan (⊖◀◀ / ⊖▶▶) button**
Press the ▶▶ side of the button to search in the forward direction while playing back the videodisc.
Press the ◀◀ side of the button to search in the reverse direction while playing back the videodisc.
⑥ **Chapter Skip button (⏮/⏭)**
Press the ⏭ side of the button to skip directly to beginning of the next chapter, press the ⏮ side to skip directly back to the beginning of the chapter currently in play. This operation can only be performed on an LD Player with chapter skip function.
⑦ **Pause/Still (II/▶◀) button**
Temporarily interrupts playback.

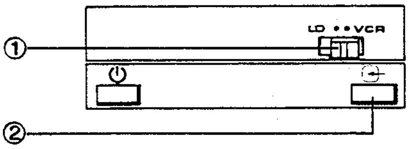


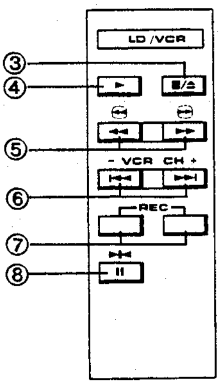


VCR Control

Turn on your VCR before operating.

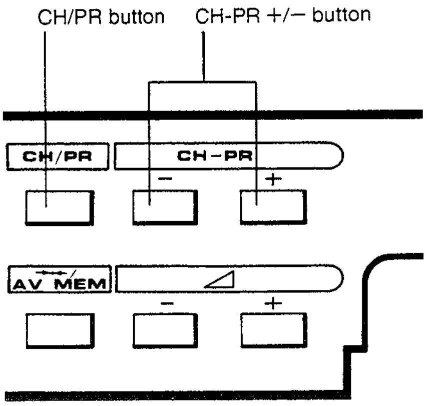
① **Set the LD/VCR switch to VCR.**
② **Press the ⊖ button repeatedly to set the input selector to the AV connector/terminal to which the VCR is connected.**
③ **Stop/Eject (■/⏏) button**
Press once to stop playback.
* Eject function will be performed only if your VCR is equipped with the remote control eject function.
④ **Play(▶) button**
Press to begin playback.
⑤ **Rewind/Fast Forward (⊖◀◀/⊖▶▶) button**
This button allows high-speed movement through parts of the tape that you don't wish to watch. Press the left side of the button to rewind the tape, and the right side to advance.
During playback, use this button to search visually forward or backward.
⑥ **VCR CH (Channel) +/– button**
Press to select the channel of the TV tuner on the VCR.
⑦ **REC (Record) buttons**
Press both buttons at the same time to start recording.
⑧ **Pause/Still (II/▶◀) button**
Temporarily interrupts recording or playback, producing a still picture during playback.





TV CHANNEL SELECTION

The Projection TV uses a frequency synthesizer tuning system to permit reception of the B/G, I, D/K, L, L' and M reception standards and enables reception of up to almost 500 channels world-wide using 5 channel tables. (See pages 45 to 47).
You can use the "+" or "–" marked C-P button on the remote control unit or the control panel on the Projection TV to skip through the TV channels one by one.
Or you can use the remote control unit numeric buttons "0" through "9" to directly enter the channel or program number.

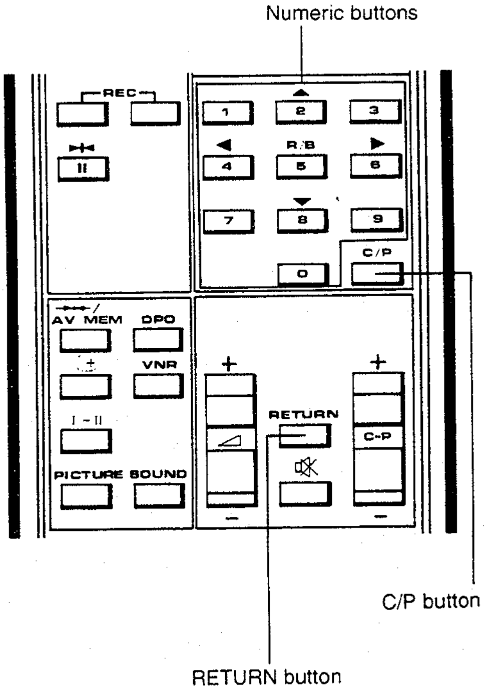


To select a TV channel directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the C/P button to select "CH".
   Example:

To select CH 9	Press 9 (or press 0, then 9)
To select CH 59	Press 5, then 9
To select CH 20	Press 2, then 0

NOTE:
- *When selecting a two-digit channel number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the channel number.*



To select a program number directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the C/P button to select "PR".
   Example:

To select PR 7	Press 7 (or press 0, then 7)
To select PR 39	Press 3, then 9
To select PR60	Press 6, then 0

NOTE:
- *When selecting a two-digit program number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the program number.*

If you wish to watch the previously selected channel
Press the RETURN button on the remote control unit. The TV channel or programmed channel selected immediately prior to the current one will appear.

To return to the original TV channel or programmed channel, press the RETURN button again.

TV CHANNEL SELECTION

The Projection TV uses a frequency synthesizer tuning system to permit reception of the B/G, I, D/K, L, L' and M reception standards and enables reception of up to almost 500 channels world-wide using 5 channel tables. (See pages 45 to 47).
You can use the "+" or "–" marked C-P button on the remote control unit or the control panel on the Projection TV to skip through the TV channels one by one.
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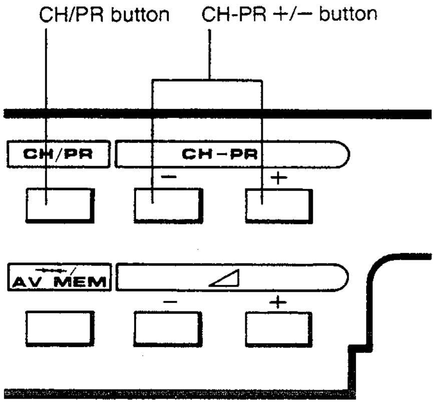
To select a TV channel directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the C/P button to select "CH".
   Example:

To select CH 9	Press 9 (or press 0, then 9)
To select CH 59	Press 5, then 9
To select CH 20	Press 2, then 0

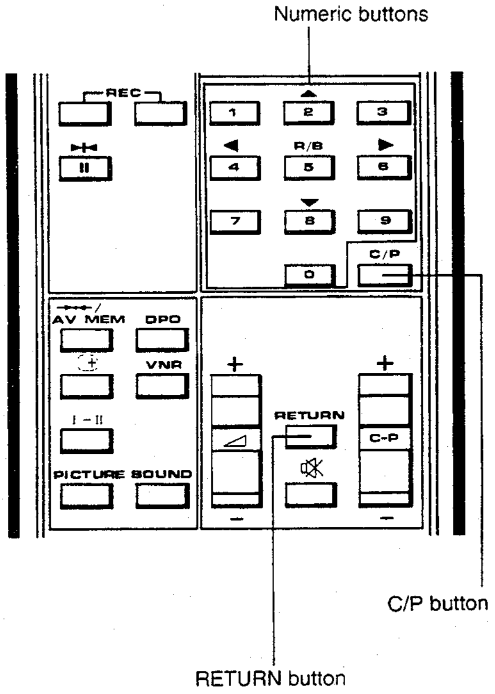

CH/PR button
CH-PR +/– button

NOTE:
- *When selecting a two-digit channel number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the channel number.*

To select a program number directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the C/P button to select "PR".
   Example:

To select PR 7	Press 7 (or press 0, then 7)
To select PR 39	Press 3, then 9
To select PR60	Press 6, then 0


Numeric buttons
C/P button
RETURN button

NOTE:
- *When selecting a two-digit program number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the program number.*

If you wish to watch the previously selected channel
Press the RETURN button on the remote control unit. The TV channel or programmed channel selected immediately prior to the current one will appear.

To return to the original TV channel or programmed channel, press the RETURN button again.

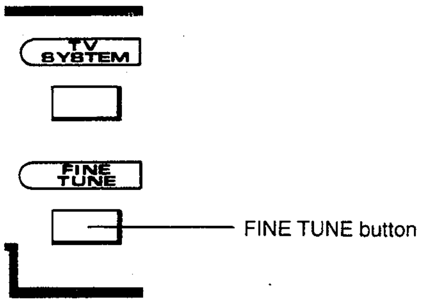
Fine tuning

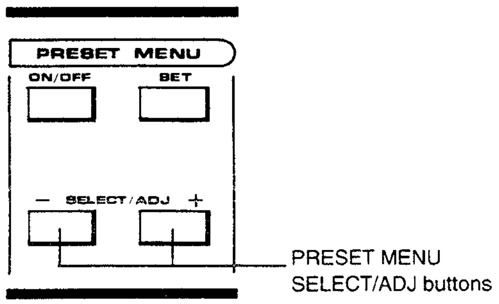
In areas with poor reception and in the case of stations where the transmission frequencies deviate from those given in the channel tables, it may prove necessary to improve the picture and sound quality by means of fine tuning.

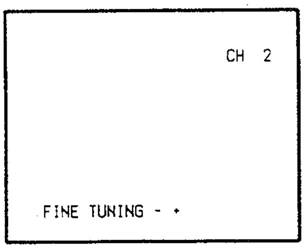
1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the C/P button to select "CH".
3. Press the FINE TUNE button. The fine tuning display will appear on the screen.
4. Press the PRESET MENU + or – button to adjust the tuning of the picture and sound as clearly as possible. The mark on the screen (+ or –) will flash while the button is pressed.
5. When fine tuning is completed:
   Press the FINE TUNE button again. The fine tuning display will disappear from the screen.

NOTE:

- *Fine tuning will be cancelled automatically when another TV channel or programmed channel is selected. Fine tuning is necessary if the selected TV program cannot be seen clearly or when distorted sound is heard.*


TV SYSTEM
FINE TUNE
FINE TUNE button


PRESET MENU
ON/OFF
SET
– SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

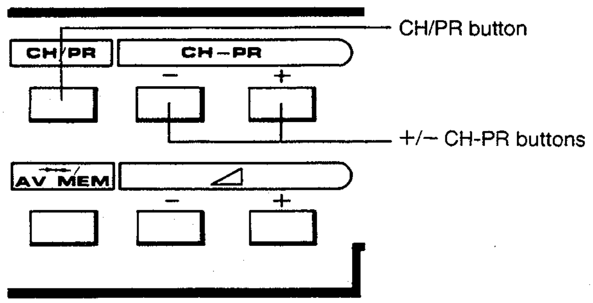

CH 2
FINE TUNING - +

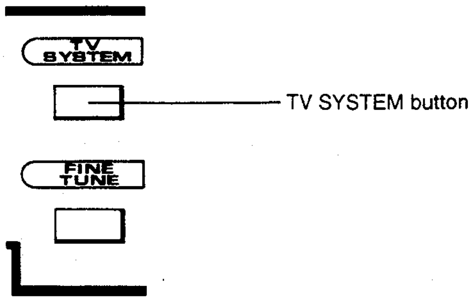
TV system setting

This Projection TV can select the following TV systems while tuned in to a TV channel:
B/G, I, D/K, L, L' and M systems.

1. Press the "0" through "9" numeric buttons to input the desired channel ; if the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the C/P button to select "PR".
3. Press the TV SYSTEM button to select a TV system on the front panel. TV system display will appear on the screen in the following sequence:

→ B/G → I → L → L' → D/K → M

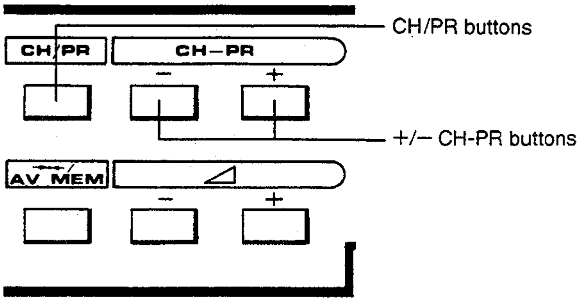

CH/PR button
CH/PR
CH–PR
–
+
+/– CH-PR buttons
AV MEM
–
+


TV SYSTEM
TV SYSTEM button
FINE TUNE

TV CHANNEL SELECTION

Channel table selection

This Projection TV tuner has 5 sets of channel tables (refer to pages 45 - 47 for details).
You can select the most suitable channel table for your area for watching TV programs.

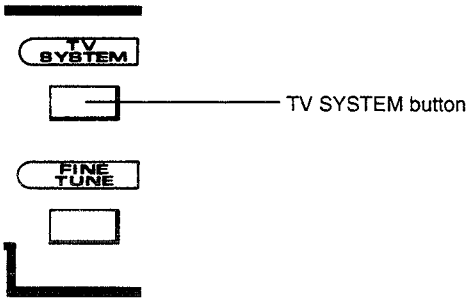

CH/PR
CH–PR
–
+
AV MEM
–
+
CH/PR buttons
+/– CH-PR buttons

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).

2. If "PR" appears, press the C/P button to select "CH".

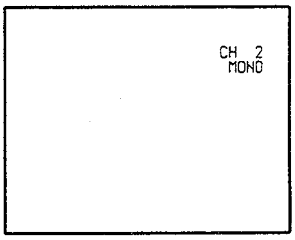
3. Press the TV SYSTEM button on the panel. Channel table display will appear on the screen in the following sequence:

┌─ Table A → Table B → Table C → Table D → Table E ─┐


TV SYSTEM
FINE TUNE
TV SYSTEM button

SOUND AND VIDEO MODE SELECTION

This projection TV incorporates the follwing tuner STEREO SYSTEMS:
1) GERMAN/CCIR/A2 ANALOG 2 CARRIER SYSTEM (B/G)
2) NICAM DIGITAL STEREO (B/G,I)
3) MTS (M)



Selecting dual TV sound program

If the TV system is set to B/G, CCIR 2 carrier analog system can be decoded when broadcasted. You can select stereo or monaural sound and original or second language audio while watching a TV program.
If STEREO appears on the screen for approximately 4 seconds:
The program is being broadcast in stereophonic sound.

NOTE:
- *The TV sound decoder will select stereo sound or monaural sound automatically, according to the sound mode of the TV program.*

Selecting monaural sound

If you wish to listen to monaural sound while a stereo sound program is being received; or if you hear a lot of static while receiving a stereo sound program.

1 Turn the Projection TV on and select a TV station.

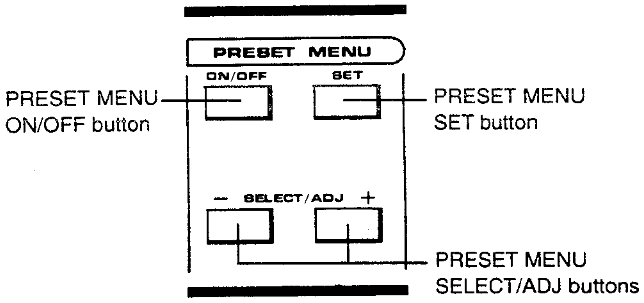
2 Press the PRESET MENU ON/OFF button to turn the operation menu on.
Operation menu will appear on the screen.

3 Press the PRESET MENU SELECT/ADJ buttons until SOUND SYSTEM turns red, and then press the PRESET MENU SET button.

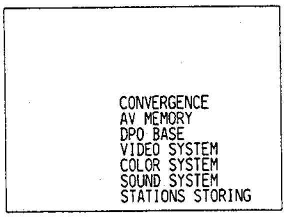
4 Press the PRESET MENU SELECT/ADJ buttons to select SOUND SYSTEM MONO.

5 After selecting the sound system, press the PRESET MENU SET button to memorize the setting.

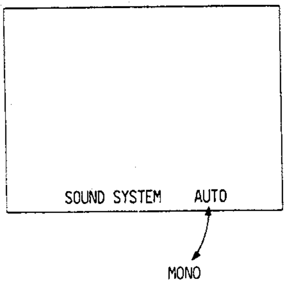
6 Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.


PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
– SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

■ **Preset Menu**


CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING

■ **Sound System selection**

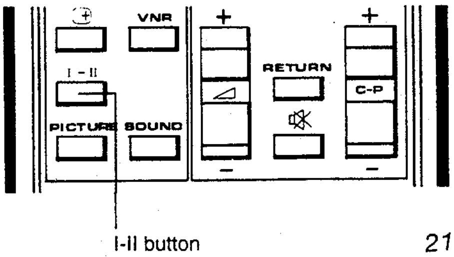

SOUND SYSTEM AUTO
MONO

Dual sound reception

If DUAL I appears on the screen:
The program is being broadcast in two languages. You can select between the original and second language audio signals by pressing the I - II button.
The switching sequence is as follows:

DUAL I (original language) → DUAL II (second language) → DUAL I/II (original and second language)

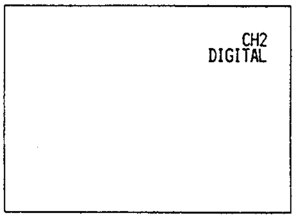
Notice:
It takes (several) 4 ~ 5 sec approx for MONO/STEREO and MONO/ DUAL switching for CCIR system when sound system in PRESET MENU is set to AUTO.


VNR
I - II
PICTURE
SOUND
RETURN
C-P
+
–
+
–
I-II button

SOUND AND VIDEO MODE SELECTION

NICAM system mode setting

If the TV system is set to B/G or I, NICAM DIGITAL SOUND can be received.
In some countries and/or with some stations, the television sound is broadcast using the digital NICAM system, instead of the conventional analog stereo sound system.



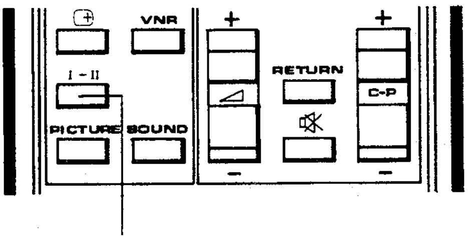
If DIGITAL STEREO appears on the screen for approximately 4 seconds:
The program is broadcast in NICAM stereophonic sound.
If DIGITAL appears on the screen for approximately 4 seconds:
The program is only broadcast in NICAM monaural sound.

NOTE:
- *If the SOUND SYSTEM mode is selecting the SOUND SYSTEM AUTO, the Projection TV will automatically select the digital sound system instead of conventional sound system.*

The NICAM sound may be disturbed by hissing or crackling noises due to a weak station signal. This interference can be eliminated by switching over from NICAM to analog (conventional) FM mono reproduction.
In this case, set the SOUND SYSTEM to MONO.
MONO.

NICAM Dual sound reception

If DIGITAL I appears on the screen:
The program is broadcast in two NICAM languages. You can select between the original language and second language digital audio signals by pressing the I - II button.



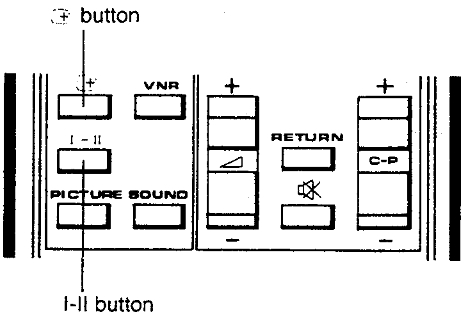
I-II button

Selecting second language
Press the I - II button. DIGITAL II will appear on the screen.
Press the I - II button again. DIGITAL I / II is selected.
Press the I - II button three times to return to the original language of the broadcast. DIGITAL I will reappear on the screen.
The switching sequence is as follows:

→DIGITAL I → DIGITAL II → DIGITAL I/II

MULTI-CHANNEL TV SOUND (MTS)

If the TV system mode is set to M., Multichannel TV sound system can be received.
A multichannel TV sound decoder is built into the Projection TV. This MTS decoder permits stereo and SAP sound reception (SAP is a "second audio program" often used for a second language). The MTS decoder is only effective if the broadcast includes stereo or SAP signals.



Stereo reception

If STEREO appears on the screen for approximately 4 seconds, the program is broadcasted in stereohonic sound. This decorder will select automatically between monaural and stereo according to the signals received.

Monaural reception

If you hear a lot of static while receiving the stereo TV program, set the SOUND SYSTEM to SOUND SYSTEM MONO mode.

SAP (Second Audio Program) reception

TV stations have the option of broadcasting a second audio program (SAP) signal. This additional sound channel accompanies another monaural signal or stereo signal. However, the SAP sound itself is in monaural.

Use the I - II button to switch to the MAIN/SAP setting if you wish to hear "second audio program" sound (at the MAIN/SAP setting, the SAP sound will come from the right loudspeaker while the left loudspeaker produces the main sound signal).
You will still hear stereo or monaural sound when there is no SAP signal.

NOTE:

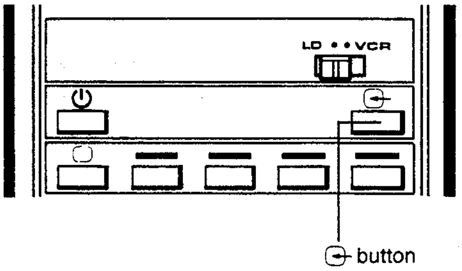
- *Broadcast stereo and SAP reception operate in accordance with the Broadcast Television Systems Committee (BTSC) standard only. Stereo audio transmission from CATV (Cable television) systems can vary from area to area and may not be compatible with the BTSC standard. Check with your local cable company for specific compatibility requirements.*

Audio Reception Mode Display (selected by the I-II button) for MTS

Broadcasted mode Mode selected		MONO + SAP	STEREO + SAP
MAIN	Display	CH 10 MAIN	CH 10 STEREO (SAP)
	REPRODUCTION mode	MONO (MAIN)	L and R
SAP	Display	CH 10 SAP	CH 10 SAP (ST)
	REPRODUCTION mode	SAP	SAP
MAIN/SAP	Display	CH 10 MAIN/SAP	CH 10 MAIN/SAP (ST)
	REPRODUCTION mode	L: MONO (MAIN) R: SAP	L: MONO (MAIN) R: SAP
MONO	Display	CH 10 MONO	CH 10 MONO
	REPRODUCTION mode	MONO	MONO

ADDITIONAL OPERATIONS

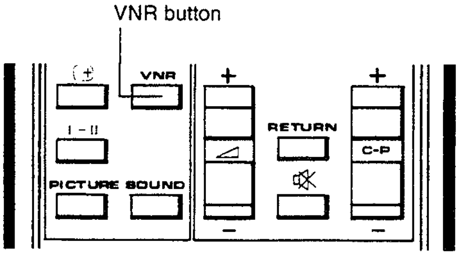
Input source selection

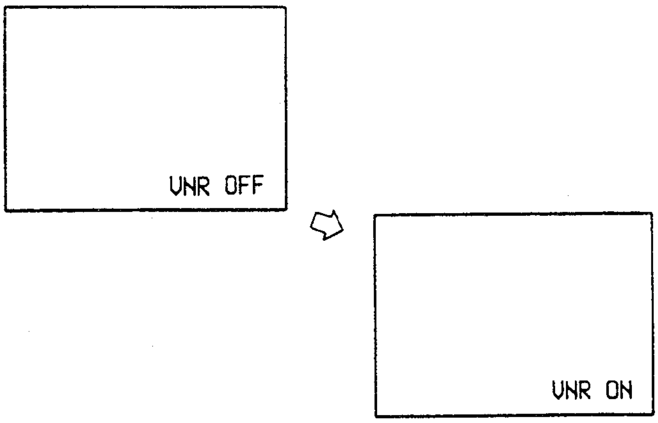

LD
VCR
⊖ button

To select video input source step by step:
Press the ⊖ button on the control panel or the remote control unit repeatedly until the desired input source appears on the screen.

VNR (Video Noise Reduction) system operation

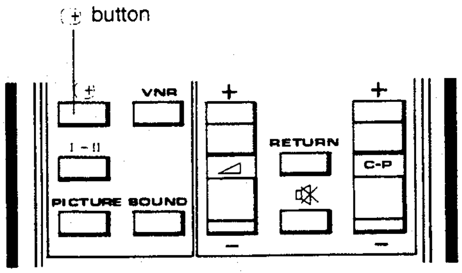
To improve picture quality with VNR while watching a TV program or prerecorded video cassette tape playback
VNR system will reduce noise contained in the video signal and improve the picture quality of TV programs or video tape playback pictures.
Press the button once to display the VNR mode (VNR ON or VNR OFF) on the screen, then press the button once or twice to select either VNR ON or VNR OFF.


VNR button
(±
VNR
I - II
PICTURE
SOUND
+
RETURN
C-P
−


VNR OFF
VNR ON

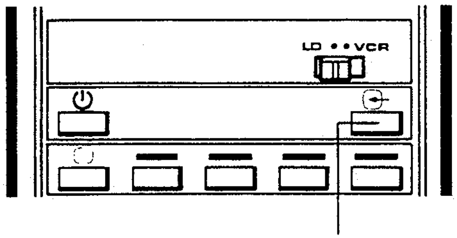
To confirm picture and sound information on the screen

Press the (± button to display the information on the screen. Four seconds later, the information display will disappear.


(± button
(±
VNR
I - II
PICTURE
SOUND
+
RETURN
C-P
−

To record from video equipment connected to the AV-1, AV-3 or AV-4 terminals to a video cassette recorder connected to the AV-2 terminals

(or record from the AV-1, AV-2 or AV-3 terminals to a video cassette recorder connected to the AV-4 terminals)



1. Turn the power on, and select the video source for playback by pressing the ⊖ button of the remote control unit.

2. Connect the recording video cassette recorder to the AV-2 connector.
   * If you wish to use the AV-4 terminals, connect the recording video cassette recorder to the AV-4 terminals.

3. Set the video cassette recorder to recording mode, then start playback of the video equipment connected to the AV-1, AV-3 or AV-4 connector.
   * If you are connecting the recording video cassette recorder to the AV-4 terminals, select an input source from the AV-1, AV-2 or AV-3.

NOTE:
- *When you switch the input source to AV-2 or AV-4 during recording, recording signals are not output from the AV-2 connector and AV-4 terminals.*

PICTURE AND SOUND ADJUSTMENT

The remote control unit has a PICTURE button and a SOUND button. These buttons allow you to adjust color, tint, contrast, brightness, sharpness, bass, treble, and balance.

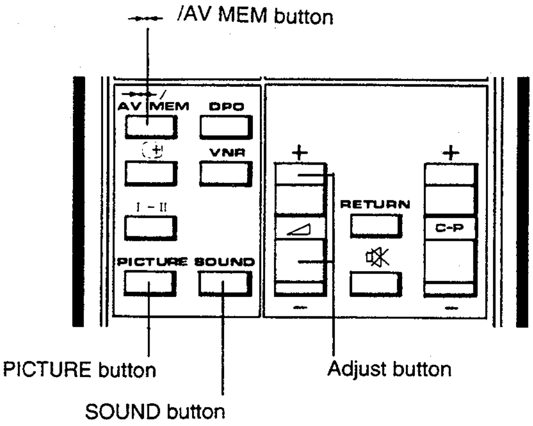
1. Press the PICTURE button or SOUND button until the item to be adjusted appears.
2. Press the volume + button to raise the value of the selected item. Press the − button to lower it.

Set each item to any value you like; the current value is shown on the screen.

Picture and sound adjustment mode will be cancelled approx. 4 seconds after the + or − button is released.

NOTE:

- *The Projection TV has been adjusted before shipping. Please make additional adjustments to suit your personal taste.*
- *These picture and sound quality settings can be stored in the AV MEMORY preset memory. See AV MEMORY on page 30.*
- *To return to the standard settings initially set at the factory, simply press the —/AV MEM button so that the screen shows STANDARD.*
- *The ⊛ (Color), ◑ (Contrast) and ☼ (Brightness) adjustments cannot be selected while the DPO button is on. If you wish to adjust them, turn the DPO off.*



—/AV MEM button

PICTURE button

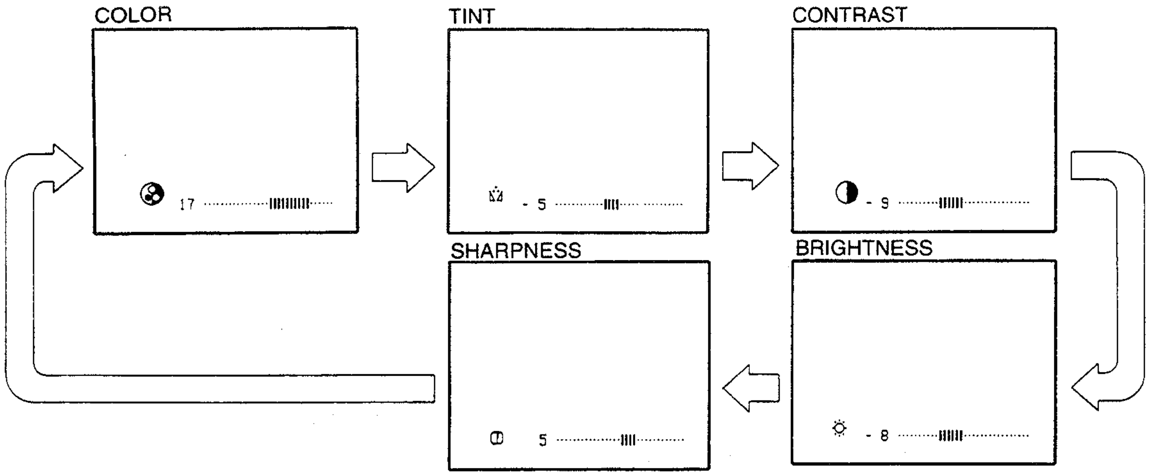
SOUND button

Adjust button

Temporary AV Memory recall

When the display disappears from the screen, the existing AV settings will be stored in the temporary memory mode. In this mode, the Projection TV's temporary AV memory settings will be restored when the power is turned on.

SCREEN INDICATIONS FOR PICTURE ADJUSTMENT


COLOR

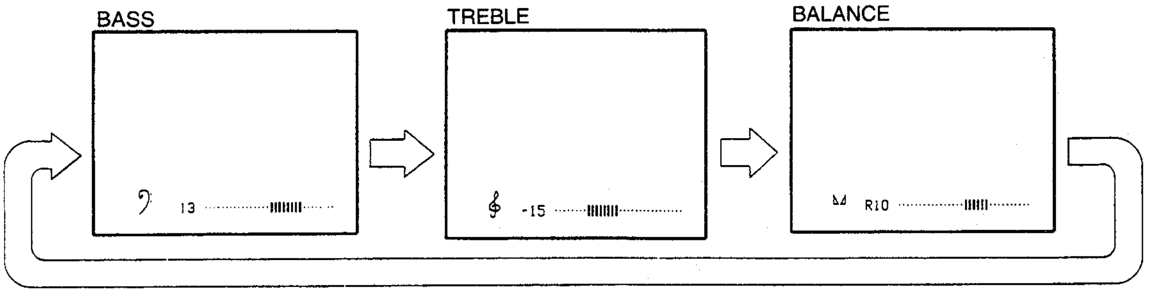
TINT

CONTRAST

SHARPNESS

BRIGHTNESS

SCREEN INDICATIONS FOR SOUND ADJUSTMENT


BASS

TREBLE

BALANCE

NOTES:

- *If the color seems abnormal but cannot be fixed by color or tint adjustment, then you may need to align the color convergence (see page 27).*
- *Bass and treble tone control adjustment range will be shown as a value between −32 and +31, and balance adjustment range will be shown as a value between L32 and R31.*
- *During the DPO adjustment and AV memory operation, 'DPO', 'STD', 'AV-1', 'AV-2', 'AV-3' or 'AV-4' will be shown on the left side of the screen. When the tone or picture quality controls are adjusted, these displays (except for the 'DPO' display) will disappear from the screen.*
- *The (Tint) adjustment only appears when the NTSC or 4.43NTSC color system is selected. Otherwise it will disappear from the picture adjustment menu.*

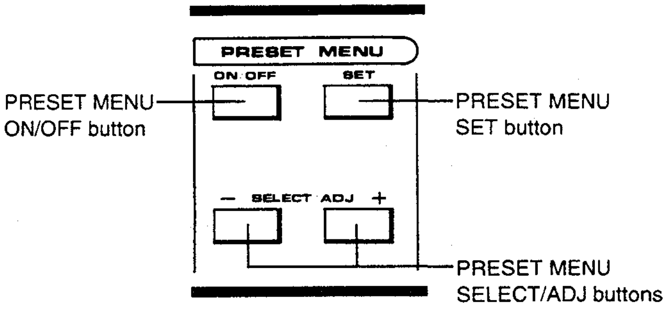
HOW TO ALIGN COLOR CONVERGENCE

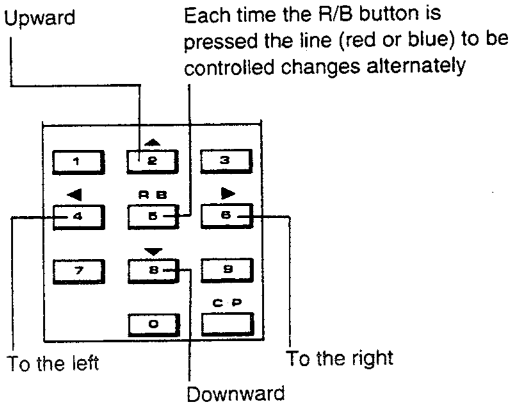
This Projection TV uses three separate picture tubes — a red, a green, and a blue tube. The red, green and blue images are projected onto the screen where they converge to form a full color picture. If they do not converge correctly, then you will see colored borders around the images.

However, convergence may drift over time or if you move the Projection TV.

Follow the steps below if color convergence alignment is needed.

1. Turn on the power and select an active channel. Wait a moment for the picture to stabilize.
2. Press the PRESET MENU ON/OFF button on the control panel. The monitor screen displays the menu (CONVERGENCE, AV MEMORY, DPO BASE, VIDEO SYSTEM, COLOR SYSTEM, SOUND SYSTEM and STATIONS STORING). Make sure that "CONVERGENCE" is displayed in red. If not, press the PRESET MENU SELECT/ADJ buttons until "CONVERGENCE" turns red.
3. Press the PRESET MENU SET button on the control panel. If color convergence is correct, there will be one vertical white line and one horizontal white line, as in figure 1.
4. If you see separate colored lines (Fig. 2 to 4), use the R/B, ◀, ▶, ▲ and ▼ buttons on the remote control unit to make the red and blue lines disappear into the other lines. Each time the R/B button is pressed, the line to be controlled (red or blue) alternates. Pressing the ◀ button moves the vertical line to the left, while pressing the ▶ button moves the vertical line to the right. Pressing the ▲ button moves the horizontal line upward, while pressing the ▼ button moves the horizontal line downward. In figure 2, for example, press the R/B button to control the red line, and then press the ◀ button until the red line converges. Press the R/B button again to control the blue line, and then press the ▼ button until the blue line converges. Convergence is correct when all three colors (red, green and blue) converge, producing single white line.
5. Press the PRESET MENU ON/OFF button when convergence is correct.


PRESET MENU
ON OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
— SELECT ADJ +
PRESET MENU SELECT/ADJ buttons


Upward
Each time the R/B button is pressed the line (red or blue) to be controlled changes alternately
1
2
3
R B
4
5
6
7
8
9
C P
0
To the left
To the right
Downward

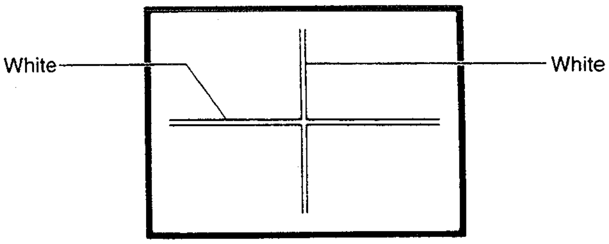

White
White

Fig. 1 Correctly aligned

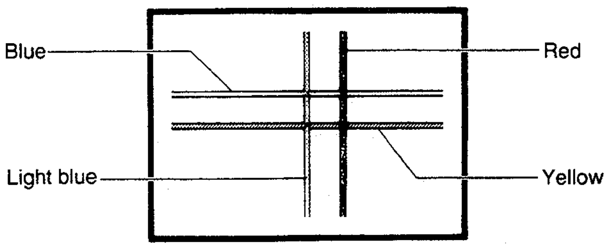

Blue
Red
Light blue
Yellow

Fig. 2 Horizontal and vertical misalignment

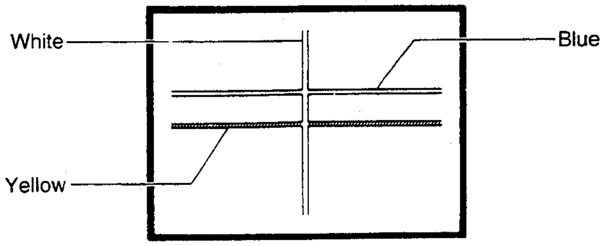

White
Blue
Yellow

Fig. 3 Vertical misalignment

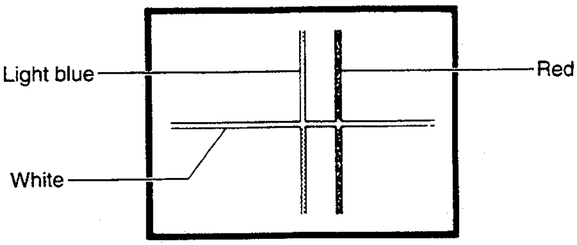

Light blue
Red
White

Fig. 4 Horizontal misalignment

HOW TO ALIGN COLOR CONVERGENCE

Color convergence alignment without using the remote control unit

Color convergence adjustment can be performed by either the operation buttons of the remote control unit as described in operation 4 of the above procedures, or the PRESET MENU SELECT/ADJ buttons and PRESET MENU SET button on the control panel as described below:

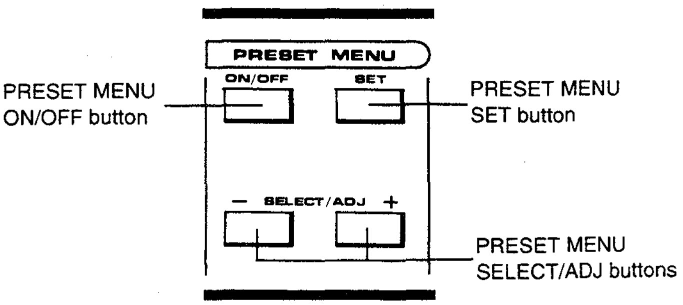
① **Press the PRESET MENU SET button to select the adjustment mode. The adjustment modes appear in the following order:**

- Convergence adjustment test pattern and arrow will appear on the screen accordingly.

Red-horizontal adjustment → Red-vertical adjustment
Blue-horizontal adjust → Blue-vertical adjustment
(*)

* Alignment proof mode; selected image only appears.

● **Use the PRESET MENU SELECT/ADJ buttons as follows:**
During Red or Blue Vertical adjustment
Press the + button to move the horizontal line upwards.
Press the – button to move the horizontal line downwards.
During Red or Blue Horizontal adjustment
Press the + button to move the vertical line to the right.
Press the – button to move the vertical line to the left.



DPO ADJUSTMENT

When the DPO (Dynamic Picture Optimizer) switch is on, the Projection TV automatically adjusts the contrast, brightness and color to match room lighting conditions. This is done according to factory preset specifications which ordinarily do not need to be changed. However, if the DPO is giving you too bright or too dim a picture, you can change its response by following these directions.

DPO adjustment is necessary under the following conditions.

Room conditions	TV screen condition	Adjustment
Dim light	Too much brighter than room lighting	DPO DARK Adjustment
Bright light	Dark TV screen (Picture cannot be seen clearly)	DPO LIGHT Adjustment

1. Under dim or bright room lighting conditions, watch a TV show, video tape or video disc.
2. Turn on the PRESET MENU ON/OFF button and press the PRESET MENU SELECT/ADJ buttons until the DPO BASE display turns red.
3. Press the PRESET MENU SET button. "DPO LIGHT" and "DPO DARK" appear on the screen.
4. Press the PRESET MENU SELECT/ADJ buttons to select the adjustment as follows:
   Bright room → select DPO LIGHT
   Dim room → select DPO DARK
5. Press the PRESET MENU SET button. "⊛ (Color)", (" ◑ (Contrast)" and " ☼ (Brightness)") appears on the screen.
6. Press the PRESET MENU SELECT/ADJ buttons to adjust the " ⊛ (Color)"
7. Repeat steps [5] and [6] to adjust the other two adjustment items " ◑ " (Contrast) and " ☼ " (Brightness).
8. Press the PRESET MENU ON/OFF button after all adjustments are completed.

On the DPO system and AV MEMORY system

When the DPO system is turned off, the Projection TV picture will be set according to its original picture data (reference AV MEMORY data, memorized AV MEMORY 1, 2, 3 or 4 data).

When the DPO system is turned on, the Projection TV picture will be set according to a combination of the original AV MEMORY data (reference AV MEMORY data, AV MEMORY 1, 2, 3 or 4 data) and the DPO adjustment data.

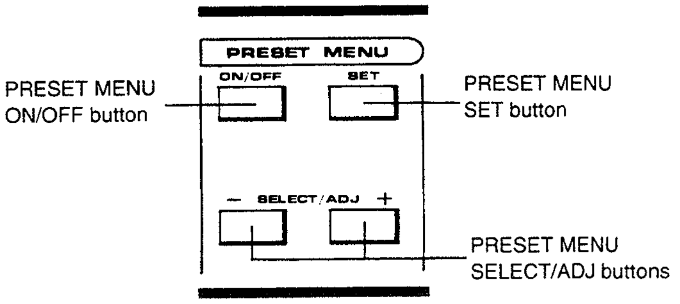
Attention

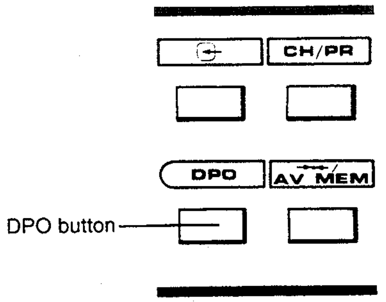
The following picture adjustments should not be performed when the DPO system is engaged.

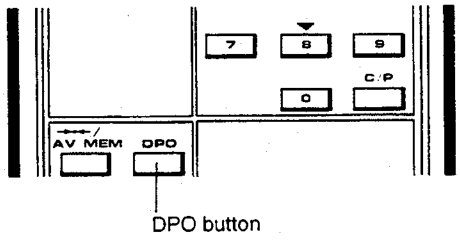
They are automatically adjusted to the proper level by the DPO microcomputer according to lighting conditions when the system is turned on.

If you wish to adjust these items, turn the DPO system off before making adjustments.

- ⊛ (COLOR)
- ◑ (CONTRAST)
- ☼ (BRIGHTNESS)





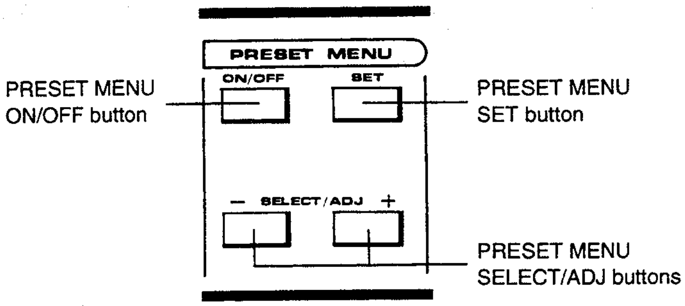


AV MEMORY

After making adjustments, you can store your picture and tone quality settings in the Four AV MEMORY presets. Follow the procedure below.

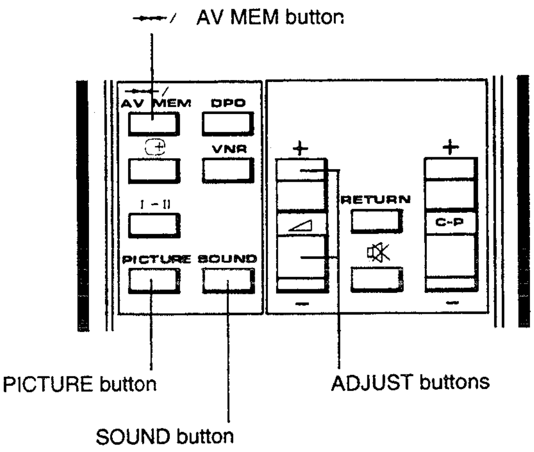
Storing a Setting

1. Watch a TV show, video tape or video disc.
2. Adjust the picture and tone using the PICTURE button, SOUND button and ADJUST buttons.
3. Turn on the PRESET MENU ON/OFF button, and press the PRESET MENU SELECT/ADJ buttons until the AV MEMORY display turns red.
4. Press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ buttons to select the AV memory (AV MEMORY 1, 2, 3 or 4) in which the setting is to be stored.
6. Press the PRESET MENU ON/OFF button to store the setting in AV memory and to return to normal operation.


PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
— SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

Recalling a Setting

Press the —/AV MEM button on the remote control unit.
Each press of the —/AV MEM button moves the selection from STANDARD to AV MEMORY 1, to AV MEMORY 2 to AV MEMORY 3, to AV MEMORY 4 and then back to STANDARD again.
(Press the button while the previous legend is still on the screen. Otherwise, it will return to the STANDARD setting.)

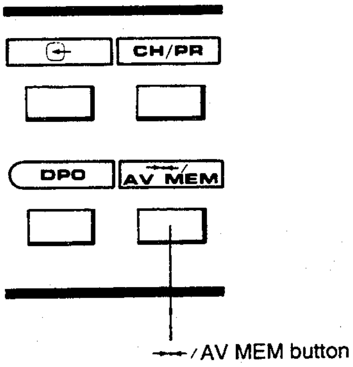

—/ AV MEM button
—/AV MEM
DPO
VNR
I - II
PICTURE
SOUND
RETURN
C-P
+
+
—
—
PICTURE button
SOUND button
ADJUST buttons

Returning to the Standard Setting

Press the — /AV MEM button so that the screen shows STANDARD.

Recalling a setting with the — /AV MEM button on the control panel

Press the — /AV MEM button repeatedly to recall a setting, as described above for the remote control operation buttons.


CH/PR
DPO
—/AV MEM
—/AV MEM button

NOTE:

- *Adjustments made to the AV memory, bass and treble tone, etc. will only affect the output from the (Audio output: Variable) jacks.*
  All other signals output from the Projection TV will be unaffected. Only the original output signal is sent through the Projection TV output jacks.

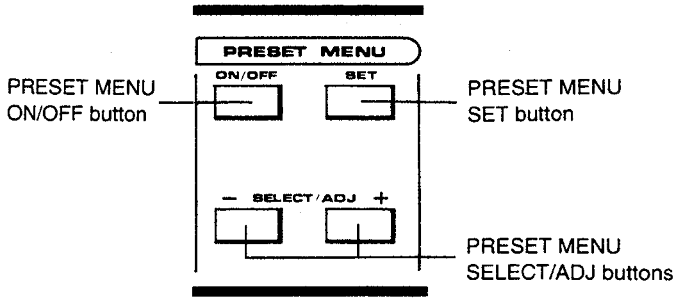
On the AV Memory assignment

AV memory can be assigned to a selected input source: TV, AV-1, AV-2, AV-3 or AV-4. For example, the AV memory settings for TV can be stored in the STANDARD mode, AV3 settings in AV MEMORY 1, and AV1 settings in AV MEMORY 2.
To select the desired input source press the button, then press the—/AV MEM button repeatedly to recall the desired settings.

SELECTING THE COLOR SYSTEM

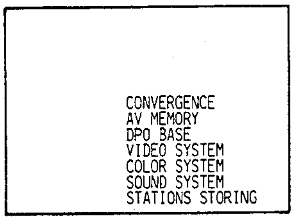
This Projection TV can display an NTSC 4.43 (Modified north American)-based color video source if your video equipment also has this feature. You can watch NTSC 4.43-based prerecorded tapes on the Projection TV. The Projection TV will select the color mode automatically between PAL, SECAM, NTSC and NTSC 4.43 depending on the playback video source.

1. Press the input selector for the video source you wish to watch, or press the numeric buttons to select the desired TV channel.
2. Press the PRESET MENU ON/OFF button to turn on the preset menu display.
3. Press the PRESET MENU SELECT/ADJ buttons repeatedly until COLOR SYSTEM turns red.
4. Press the PRESET MENU SET button to select the color system setting.
5. Press the PRESET MENU SELECT/ADJ button to select the desired color system; PAL, SECAM, NTSC or 4.43 NTSC. Select the AUTO color system mode if you wish to watch the PAL, SECAM, NTSC or 4.43 NTSC systems without having to perform any color system selecting operations.
6. After selecting the color system mode, press the PRESET MENU SET button to memorize the mode.
7. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.



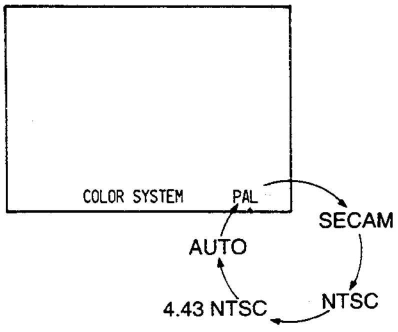
NOTE:
- *Poor signal quality prerecorded tapes will cause unstable picture reproduction and an off-color picture will be seen.*
  This is not a malfunction of the Projection TV.

■ Preset menu



CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING

■ Color system mode selection



VIDEO SYSTEM SETTING

This operation will select the input source of the AV-1 and AV-2 EURO connectors and AV-3 and AV-4 RCA pin jacks of the Projection TV. This selection determines what video input system will be used when the AV-1, AV-2, AV-3 or AV-4 is selected. If your connected video equipment has S-VIDEO features, select S-VIDEO video input system for the best picture quality reception. This Projection TV offers the following video input systems.

S-VIDEO: Separated Luminance and Chrominance video signal input.
NORMAL: Standard composite video signal input.

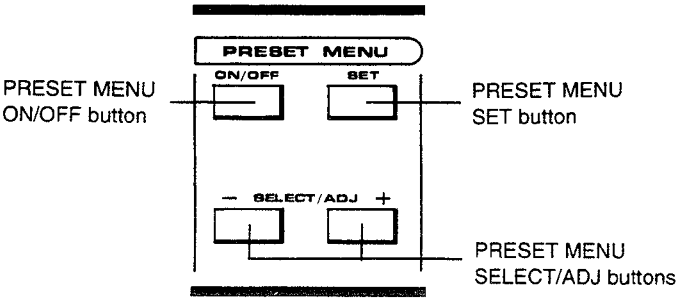
1. Turn on the power.
2. Press the ⊕ button to select the input source for which you wish to set the video input system.
3. Press the PRESET MENU ON/OFF button to display the preset menu on the screen.
4. Press the PRESET MENU SELECT/ADJ buttons repeatedly until VIDEO SYSTEM turns red.
5. Press the PRESET MENU SET button to select VIDEO SYSTEM.
6. Press the PRESET MENU SELECT/ADJ buttons until VIDEO MODE turns red.
7. Press the PRESET MENU SET button to select VIDEO MODE.
8. Press the PRESET MENU SELECT/ADJ buttons to select the desired video input system as follows:
   NORMAL: Composite (Mixed) video input system is selected.
   S-VIDEO: Separated luminance and chrominance video input system is selected.
9. After selecting the video input system, press the PRESET MENU SET button to memorize the setting.
10. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.

NOTE:
- *Most video equipment uses the composite video input system.*
- *When using AV-3 and AV-4 S-VIDEO terminals to connect video equipment, the S-VIDEO video mode must be selected.*

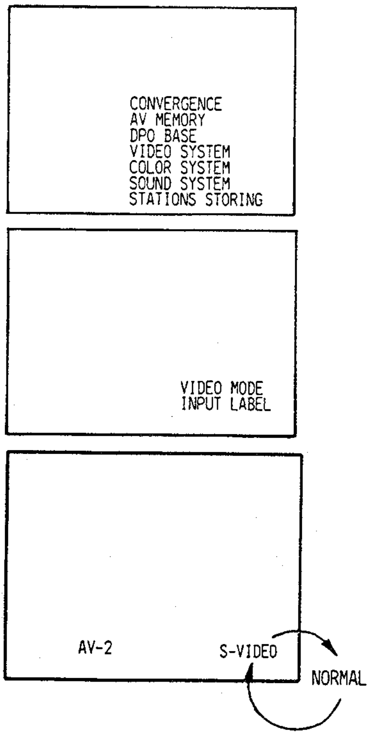
RGB operating mode

This operating mode is provided for connection of satellite decoders, home computers, video games, interactive video text decoders, etc. Connect to the AV-1 socket.

If the other unit supplies an RGB signal for internal or external synchronization using a switching voltage, you can assign the appliance in question to a Program Number 1-64 (for details, refer to the operating manual of the other unit).
If the other unit supplies an RGB signal for external synchronization using a switching voltage, you can assign the appliance in question to AV-1 (for details, refer to the operating manual of the other unit). Before switching over from RGB to television mode, switch off RGB signal source.



■ **Preset menu**



STATIONS STORING

Refer to the television channel table before using the TV stations storing feature.
See pages 45 to 47 "TV CHANNEL SELECTION."

1. Turn the Projection TV on and select a TV station.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on. Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button.
4. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button. Press the PRESET MENU SELECT/ADJ button to select the desired program number. Selected program number will flash on and off, and then press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ buttons to select the TV channel as follows:
   Use the + button to increase channel number.
   Use the – button to decrease channel number.
6. Select a channel table under which you wish to store stations by pressing the TV SYSTEM button repeatedly.
7. Press the PRESET MENU SET button to store the tuned-in station.
   If you wish to change the TV system, press the TV SYSTEM button repeatedly until the desired TV system appears on the screen. If you wish to select D/K system, press the TV SYSTEM button repeatedly until D/K appears on the screen, for example.
8. Press the PRESET MENU SET button to store the TV channel and TV system.
   If you wish to continue the operation, repeat steps 5 thru 8 above.
9. Press the PRESET MENU ON/OFF button when you finish TV station storing.

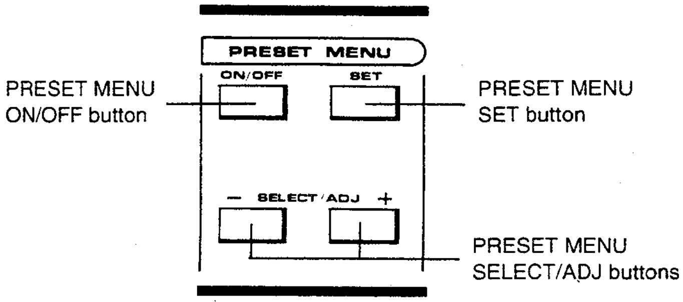
If you wish to replace or reenter a TV channel

Repeat steps 2 thru 9 above.

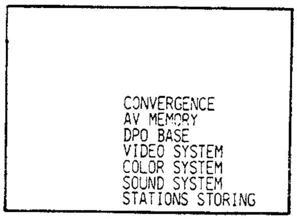
If you wish to directly enter the channel number during TV station presetting

Use the numeric buttons of the remote control unit instead of the PRESET MENU SELECT/ADJ buttons of the Projection TV.

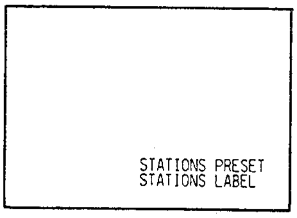
1. After setting the Projection TV in TV station presetting mode, follow steps 1 thru 4 above.
2. Press the numeric buttons as follows:
   Example
   To preset channel 8: Press the 8 button.
   To preset channel 40: Press the 4, then the 0 (zero) buttons.
   To preset channel 33: Press the 3 button twice.
3. Press the PRESET MENU SET button to store the TV channel.



■ Preset Menu

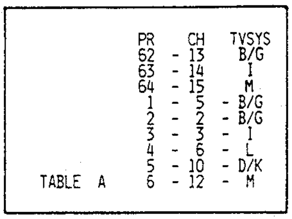


```
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
```



```
STATIONS PRESET
STATIONS LABEL
```

■ Stations Storing Menu

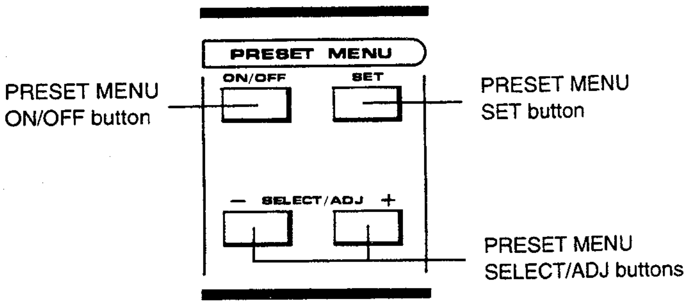


```
             PR   CH   TVSYS
             62 - 13    B/G
             63 - 14     I
             64 - 15     M
              1 -  5  - B/G
              2 -  2  - B/G
              3 -  3  -  I
              4 -  6  -  L
              5 - 10  - D/K
TABLE  A      6 - 12  -  M
```

STATIONS STORING

If you wish to delete a programmed TV channel

1. After setting the Projection TV to the TV station presetting mode, follow steps 1 thru 4 on page 33.
2. Press the 0 (zero) button, or press the PRESET MENU SELECT/ADJ buttons until "0" appears on the channel display.
3. Press the PRESET MENU SET button to delete the TV station.

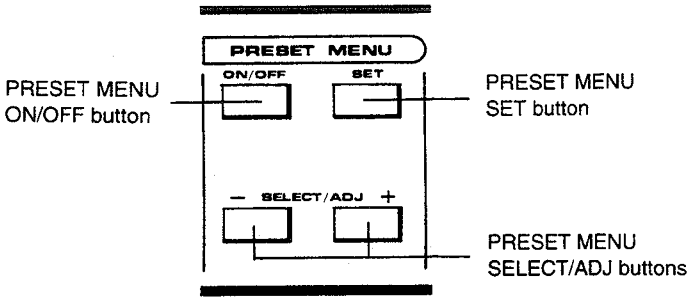

PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
— SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

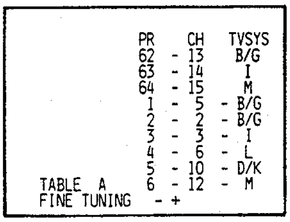
To program a number after it has been deleted from the memory:
Reenter the channel under the deleted program number.
Refer to page 33.

Fine tuning for the programmed TV channels

You can store the precise tuning setting of programmed TV channels by following the instructions below:
In areas with poor reception and in the case of stations where the transmission frequencies deviate from those given in the channel tables, it may prove necessary to improve the picture and sound quality by fine tuning.

1. Press the "0" through "9" numeric buttons to input the desired channel you wish to finely tune it.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on. Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button. Press the PRESET MENU SELECT/ADJ buttons until STATIONS PRESET turns red, and then press the PRESET MENU SET button. The selected program number will flash on and off.
4. Press the FINE TUNE button. The fine tuning display will appear on the screen.
5. Press the + or – button repeatedly until the picture and sound are as clear as possible.
6. When the fine adjustment is completed:
   Press the FINE TUNE button or PRESET MENU SET button again.

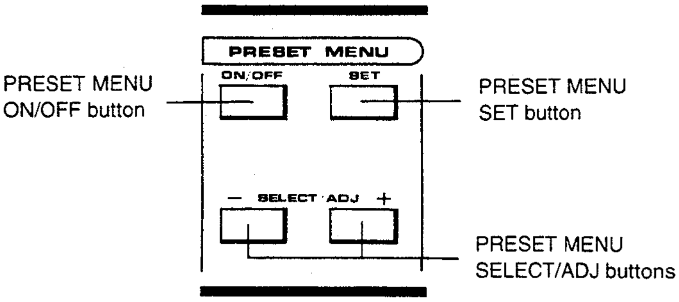

PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
— SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons



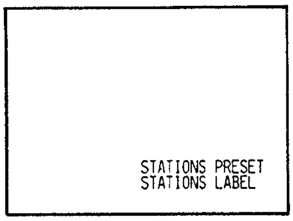
```
                  PR   CH  TVSYS
                  62 - 13   B/G
                  63 - 14    I
                  64 - 15    M
                   1 -  5 - B/G
                   2 -  2 - B/G
                   3 -  3 -  I
                   4 -  6 -  L
                   5 - 10 - D/K
 TABLE  A          6 - 12 -  M
 FINE TUNING     - +
```

USING THE STATION LABEL FUNCTION

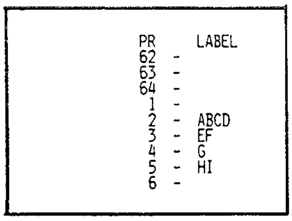
The station label function can be used to label each station with a call sign, network name, etc. For example, 'ABCD' can be displayed on the screen when the 'PR 1' is selected. The station label can be up to 4 characters long using the 52 characters, including __ (space) listed below.



1. Turn on the Projection TV and select a PR number you wish to label.
2. Press the PRESET MENU ON/OFF button to turn on the operation menu.Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button.
4. Press the PRESET MENU SELECT/ADJ buttons until STATIONS LABEL turns red, and then press the PRESET MENU SET button. Selected program number turns red.
   Press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ buttons to select the desired character.
   * Press the + or – button repeatedly until the desired character appears.
6. Press the PRESET MENU SET button to set the selected character.
7. If you wish to select additional characters, repeat steps 5 and 6.
8. Press the PRESET MENU ON/OFF button once when you finish inputting all of the desired station labels.



STATIONS PRESET
STATIONS LABEL



PR LABEL
62 -
63 -
64 -
1 -
2 - ABCD
3 - EF
4 - G
5 - HI
6 -

NOTES:

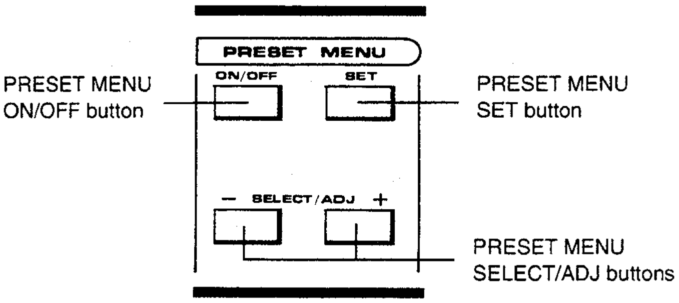
- *The following 52 characters, including __ (space), can be selected.*

ABCDEFGHIJKLMNOPQRSTUVWXYZÄÖÜÆØÅÑÉÇ0123456789:<> – . , □

Space

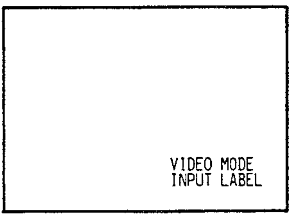
- *Be sure to press the PRESET MENU SET button after selecting the character.*

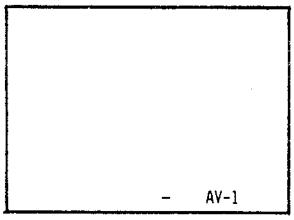
HOW TO RELABEL INPUT DISPLAYS

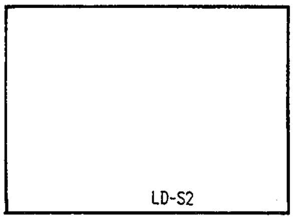


The input label function can be used to replace the input displays, such as AV-1 or AV-2, with the model numbers or model names of the equipment that are connected to the Projection TV. For example, you can display 'LD-S2' on the screen when selecting the AV-1 input source.
The input label can be up to 8 characters long using the 52 characters, including __ (space), listed below.

1. Turn on the Projection TV and select the input (AV-1, AV-2, AV-3 or AV-4) that you wish to replace with the model number of the equipment connected to the Projection TV.
   Example: Replacing the AV-1 display with model number 'LD-S2'.
2. Press the PRESET MENU ON/OFF button, and then press the PRESET MENU SELECT/ADJ buttons until the VIDEO SYSTEM display turns red, and then press the PRESET MENU SET button.
3. Press the PRESET MENU SELECT/ADJ buttons until the INPUT LABEL display turns red.
4. Press the PRESET MENU SET button. 'AV-1' will appear in the right-hand corner of the screen.
5. Press the PRESET MENU SELECT/ADJ buttons to select the desired character.
   * Press the + or – button repeatedly until the desired character appears.
6. Press the PRESET MENU SET button to set the selected character.
7. If you wish to select additional characters, repeat steps 5 and 6.
8. Press the PRESET MENU ON/OFF button once when you finish replacing the input labels.







You can display the model number by pressing the ⊖ button on the remote control unit or the front panel of the main unit.

NOTES:

- *The following 52 characters, including __ (space), can be selected.*

➔ABCDEFGHIJKLMNOPQRSTUVWXYZÄÖÜÆØÑÉÇ0123456789:<> – . , ☐

Space

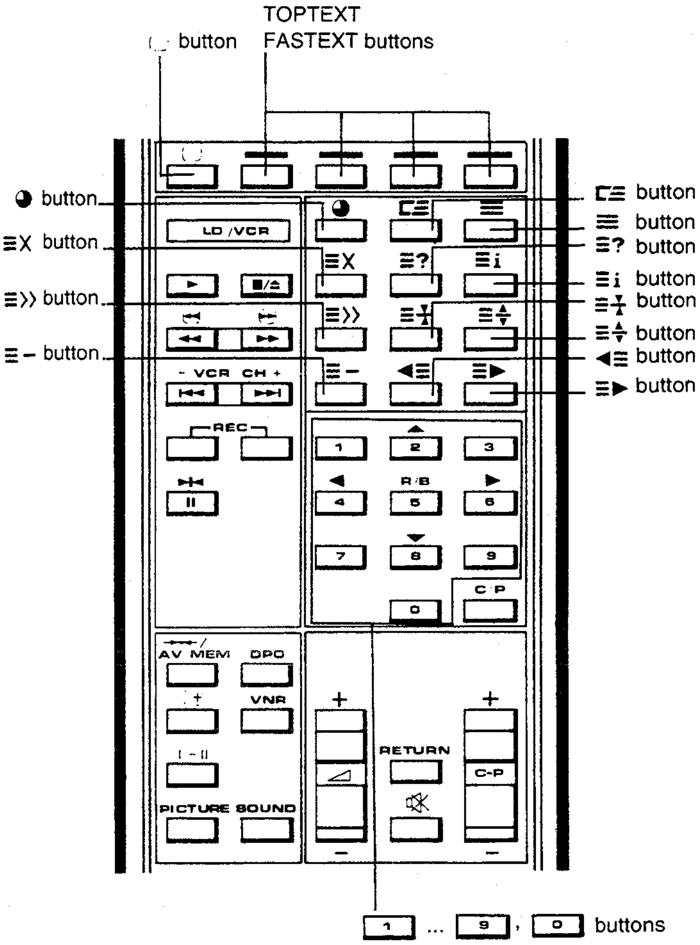
- *Make sure to press the PRESET MENU SET button after selecting the character.*

TELETEXT FUNCTIONS

What you need to know about the text mode

Button functions

≡	Switch over to the text program.
▢	Switch back to the TV program.
≡i	Call up the overview page (list of contents).
≡▶	Browse forwards in the multipage memory.
◀≡	Browse backwards in the multipage memory.
≡÷	Double the character height on the top or bottom half pages.
≡–	Return to normal character height.
≡‡	Halt and browse further in multiple pages.
≡X	Call up TV picture in text mode.
⊏≡	Mix text and TV programs.
≡?	Call up solutions.
◑	Enter a preselection page.
≡››	Switch over the multipage memory to multiple page mode. Operate this button only when a multiple page is being received.
TOPTEXT/ FASTEXT	Colored buttons for the TOPTEXT and FASTEXT systems.



Text functions

Text programs are given different designations in different countries, e.g. VIDEOTEXT or TELETEXT. The contents are sometimes called pages, sometimes panels.
In some countries text programs are broadcast in the TOPTEXT or FASTEXT system.
Text programs require a good antenna system. When reception conditions are poor, text pages may be received incompletely or not at all. For this reason, if you have a choice of stations for the same program, always choose the most powerful one.
Perform fine tuning at the Projection TV so as to ensure that you obtain the best possible TV reception. For details, see page 19.

Text programs are only transmitted together with a TV program or a test picture. Therefore, always proceed as follows:

A First select the TV program.
B Then switch over to the text program.

The text decoder of the Projection TV can store in memory several text pages simultaneously. The multipage memory allows you to call up adjacent text pages (such as news or program overviews) which may be related subjectwise, without appreciable waiting time, and also (with the TOPTEXT and FASTEXT systems) to select pages using a color menu.

> TELETEXT functions do not operate immediately after turning on the power or changing the input mode.
> A few seconds are required before operation can begin.

TELETEXT FUNCTIONS

The most important text functions

[1] Switching over to the text program.
In order to switch over from TV to text program, press the ≡ button.

[2] Calling up the list of contents.
Press the ≡i button for calling up the overview page as required. Any text pages that have been on the screen so far will be erased as soon as the text system has found the overview page.
Use the numeric buttons to select text pages, or follow the instructions given on pages 39 and 40 (for TOPTEXT programs), or the color menu (for FASTEST programs).
To utilize the other text functions, proceed in accordance with the instructions given on the following pages of this operating instructions manual.

[3] Switching back to the TV program.
In order to switch back to TV reception, press the ▢ button. Now you can, for instance, switch over to another TV program, and then to its text program.

Page selection

The individual text pages are selected by entering the corresponding page numbers.

[4] Use the numeric buttons 1 to 9 and 0 (zero) to enter the three-digit code for the desired page. You will see your input on the left of the header line, and next to it on the right the page number run-through. Run-through will not commence until the complete code has been entered.
The color of the page counter in the header line will change to white as soon as the selected page appears on the screen.
Should it not be possible to enter the three-digit code, check whether the ◑ button for time preselection has been pressed by mistake. To do this, press the ◑ button again.

For more details, see page 41, "Browsing in text pages".

Page selection in the FASTEXT system

Different subject areas are marked by different colors on the text pages; these colors also appear on the remote control unit.

[5] For information selection, you only need the colored FASTEXT buttons on the remote control unit.
Use the appropriate colored button to select the desired subject area while still in the overview page.
Select all following pages (wherever possible) by means of the color menu. This method enables you to call up a mass of information easily and quickly.

If you change from one subject to the next with the FASTEXT buttons, the following page always appears immediately on the screen unless you press several buttons in rapid succession during a lengthy search procedure.

If a text page appears without color menu, you must select a text page using the numeric buttons or call up the list of contents. For details, see steps 4 and 2 respectively.
To leave the FASTEXT system and to browse in text pages without a color menu, press the ≡▶ or ◀≡ button (see page 41, "Browsing in text pages").
To reenter FASTEXT mode, press the ≡i button.

TOPTEXT system

Overview

The TOP system enables you to select text pages easily and quickly by means of menu prompting, using the colors in the bottom line of the menu (below the text page) for this purpose. These colors also appear on the remote control unit.

After the Projection TV has been turned on and switched immediately over to a text program of the TOPTEXT system, at first only the menu colors appear on the screen. The colored buttons are still inoperative.

As soon as the TOPTEXT system has been loaded (after 30 seconds at the latest), text will appear in the color menu. The colored buttons are now operative.

The colored buttons enable you (with no waiting time)

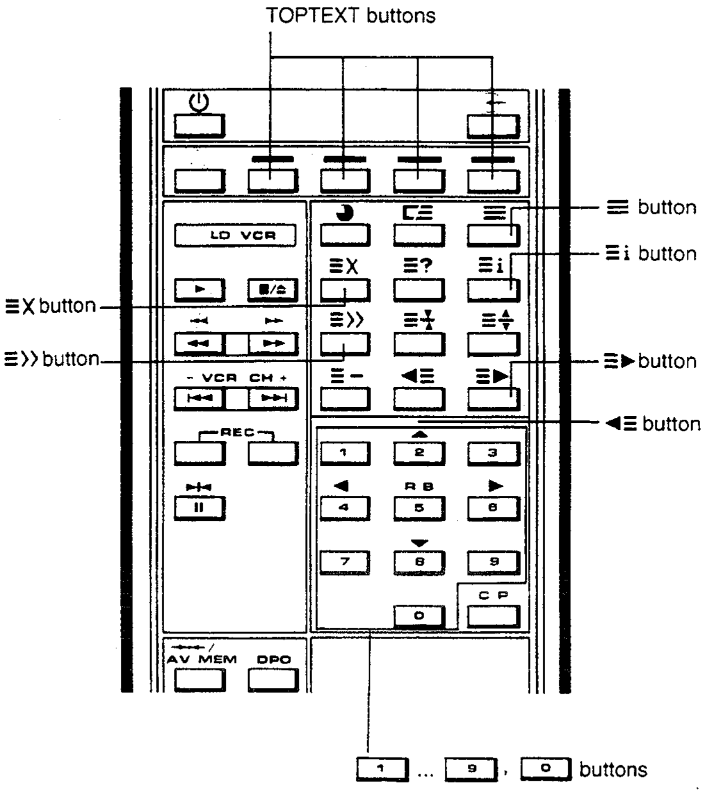
[1] To select subject areas using the Blue button.

[2] To select subjects using the Yellow button.

[3] To browse forwards and backwards within individual text pages:
Green button = P+ = forward.
Red button = P- = backwards.

Fast page selection is provided by the TOP (Table Of Pages) Table. This table is automatically read into the digital text decoder of the Projection TV when a program with TOPTEXT system is selected. The Projection TV takes from this table all requisite details on text pages contained in the program, plus the beginning of subjects and subject areas.

As soon as a page has been selected, the Projection TV recognizes which is the next or the previously single page you can select, and which is the next subject or the next subject area you can select.



Operation

1 Subject areas.
Use the Blue button to browse through the subject areas consecutively, e.g.

P–	P+	POLITICS	NEWS
			↓
P–	P+	ECONOMICS	SPORTS
			↓
P–	P+	1ST PROGRAM	TV-PROGRAM

Once you are within the subject area selected, you can continue directly with step 2 or 1.

If a particular subject area selected is not subdivided into individual subjects, the yellow fild will be empty and step 2 with the Yellow button cannot be performed, meaning that you go on directly to step 3.

The menu line displays the next selection option in each case, e.g.

P–	P+	ECONOMICS	SPORTS
		↓	
P–	P+	CULTURE	SPORTS
			↓
P–	P+	2ND PROGRAM	NEWS

2 Subjects.
Use the Yellow button to browse through the subjects of the selected area, as shown below.

	P–	P+	POLITICS	SPORTS
			↓	
	P–	P+	ECONOMICS	SPORTS
			↓	
	P–	P+	CULTURE	SPORTS
			↓	
	P–	P+	POLITICS	SPORTS
			↓	
or				
	P–	P+	FOOTBALL	TV-PROGRAM
			↓	
	P–	P+	HANDBALL	TV-PROGRAM
			↓	
	P–	P+	TENNIS	TV-PROGRAM
			↓	
	P–	P+	ATHLETICS	TV-PROGRAM
			↓	
	P–	P+	FOOTBALL	TV-PROGRAM

TELETEXT FUNCTIONS

3 Page selection.
You can use the Green button to browse forward through the individual pages of a subject, and the Red button to browse through them backward, as shown below.

P–	P+	FOOTBALL	TV-PROGRAM
	↓		
P–	P+	FOOTBALL	TV-PROGRAM
	↓		
P–	P+	FOOTBALL	TV-PROGRAM
↓			
P–	P+	FOOTBALL	TV-PROGRAM

Note that it does not matter whether pages are assigned consecutively, e.g. 101, 102, 103, 104 ..., or whether there are gaps in between, e.g. 101, 106, 118, 122 ... The TOP system will always recognize which is the next page to be opened.
Starting from the selected page, the text decoder stores the next 9 pages for forward browsing, while for backward browsing it stores the 4 preceding pages.

4 Conventional page selection.
If a page is selected using the numeric buttons, there may be (depending on the standard involved) a waiting time until the page appears on the screen.
When the page appears on the screen, the menu line shows the next subject (yellow) and the next subject area (blue) you can select.
If there is no page in the program for the page number you have selected, the menu line will flash, and the red color field will be empty, e.g.:

☐ P+ FOOTBALL SPORTS
The selected page number is lit up in red.

5 Multiple pages in the TOPTEXT system.
See pages 41 and 42 for information on the automatic browsing function and on browsing in multiple pages in conventional text systems.
For the browsing function in multiple pages in the TOPTEXT system, the following functions are operative:
After the ≡›› and ≡X buttons have been pressed, the number of the currently stored single pages will appear in the TV picture instead of the header line.
With multiple pages up to 9 single pages, the complete header line will reappear as soon as the last single page has been stored.
With multiple pages of 10 and more single pages, the header line will reappear as soon as all memories have been filled.
After the header line has appeared an the ≡ button has been pressed, you can browse back and forth between the single pages using the ≡► and ◄≡ buttons.
If you press the ≡›› button, although no page is available for this page number for the TOPTEXT system to hold, the selected page number will flash briefly in red.

6 Quitting multiple pages in the TOPTEXT system.
Press the ≡i button, or enter a new page number.

Browsing in text pages

The following functions are for text programs and text pages without color menu.

Browsing in text pages

1 Press the ≡▶ button to browse forward, or press the ◀≡ button to browse backward.

The adjoining page number is available with no waiting time.
After you have selected a text page, the multipage memory will store a whole block of 14 consecutive pages.
For example, selection and display of page 401:
pages 402 - 407 will automatically be stored in memory;
browsing to 408 and display of this page:
pages 409 - 414 will automatically be stored in memory.
After that, you can browse back and forth between pages 401 - 414 with no waiting time.
If after you have changed from one text program to another you do not select a new page, the new program contents for the previously selected 14 page numbers will be automatically filed in the multipage memory. If, however, one of these page numbers does not have any program contents, the contents of the same page number of the previously selected text program will appear on the screen. This is indicated by the page counter running through continuously, so that no confusion of text programs can occur.

Automatic browsing and halting of multiple pages

With multiple pages, several single pages are being transmitted one after the other under the same page number.
Multiple pages are often marked >>, >, 1/4 or 01/04, depending on the text system and program involved.
These multiple pages will be browsed through automatically at 20 to 30-second intervals, depending on the station concerned. The single page number and the the total number of pages are frequently indicated by codes such as 01/04.

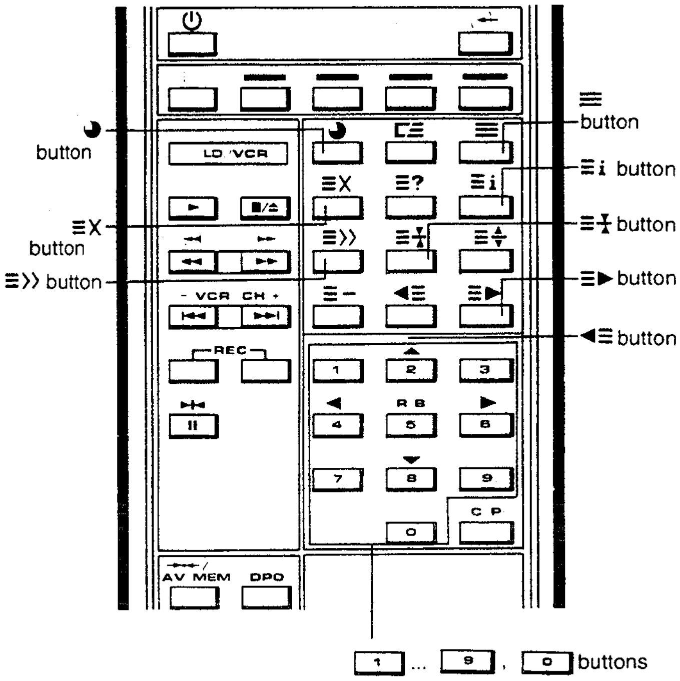
2 To halt at a single page, press the ≡Ŧ button as required. The header line now displays STOP instead of the page number. The halted page can be kept on the screen as long as you wish. To resume browsing, press the ≡Ŧ button once more. You can, however, also select another page number to quit the halted single page.

Single pages can also be called up selectively. For details, see "Entering a preselection page".

Browsing in multiple pages without color menu

You can also browse through multiple pages independently of the automatic browsing intervals.

3 If the page number of a multiple page has been entered, press the ≡›› button. The display of the selected page number on the left of the header line will change from ... to > ... One of the single pages will appear on the screen. The procedure for filling the memories with the remaining single pages can take up to 6.5 minutes, due to the standard involved.



4 While this procedure is being performed, you can watch TV. To do this, press the ≡X button. ≡X display will appear instead of the header.

5 As soon as the header line is again being superimposed onto the picture, press the ≡ button.

6 Now all single pages have been filed in the multipage memory, and you can browse back and forth between them using the ≡▶ and ◀≡ buttons.

If a multiple page consists of less than 14 single pages, the same contents will be assigned to single page memories.
If a multiple page contains only 5 single pages, for example, you can press the ≡ button (for browsing using the ≡▶ and ◀≡ buttons) as soon as the memory display on the screen shows 5.

If a multiple page contains more than 14 single pages, it is browsed through in the last memory which displays the number > ... of the selected page in the header line in yellow, at 20 to 30-second intervals as usual.

7 To quit the browsing mode, just enter a new page number.

In multiple pages of FASTEXT programs, no color menu is displayed.

TELETEXT FUNCTIONS

Entering a preselection page

Depending on the countries and text programs involved, the following preselection function options are available:

Calling up a single multiple page

This function is only possible when the screen is displaying a multiple page, e.g. with >> and 01/04.

Text at a preselected time

For a text page, such as alarm clock, you can preselect the time at which you want to see it.
This function is operative only in some text programs, and only for one page.

Entry

1 Enter the page number desired.

2 Press the ◑ button.
Instead of the page number, you will now see * in the header.

3 Enter the desired single page number in four-digit form, e.g. 0003 or enter the desired time in four-digit form, e.g. 1715 or 0830.

4 If you want to watch TV until the selected page appears, press the ≡X button. ≡X display will appear in the picture. When the single page (or the time) is reached, the header line will appear on the picture, sometimes the whole text page as well.

5 Press the ≡ button to read the page.

6 Press the ◑ or ≡i button to quit this text function.

Additional text functions

1 Mixing program contents

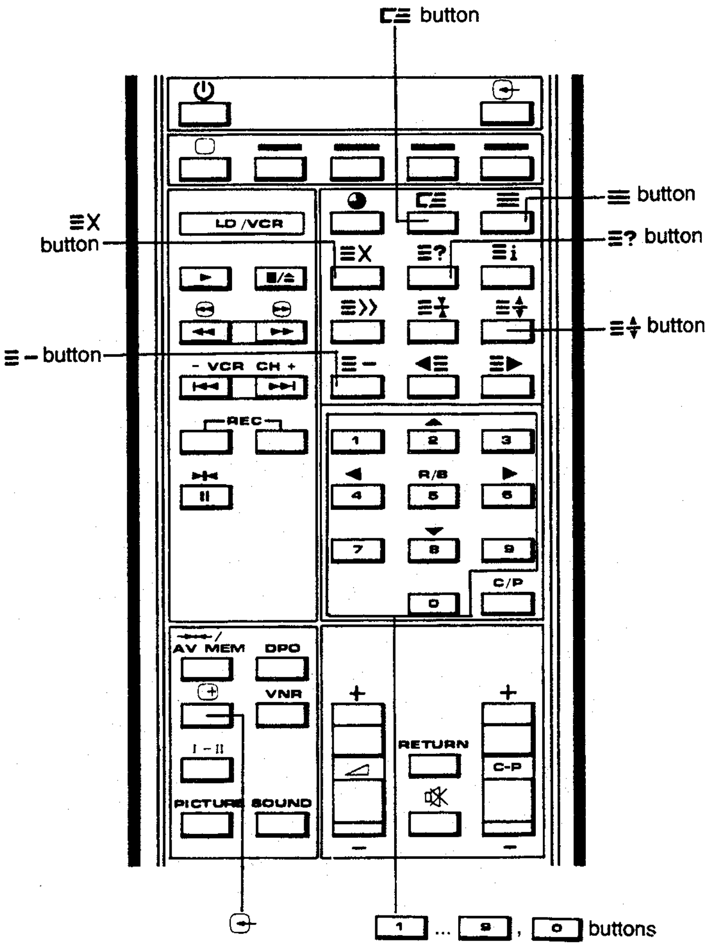
To mix the program contents, press the ≡ button, and press the ⊏≡ button again to cancel this function.

2 Latest news

Latest news items are superimposed onto the picture on special pages. News you have read can be erased by pressing the ≡X button. ≡X display will appear in the picture. With the text news update, a new text will appear in the picture.
If you want to superimpose news again manually, press the ≡ button.

3 Subtitles

On some TV channels, subtitles are superimposed synchronously. Select the text page designated for the TV channel in question.



4 Retrieval of hidden text

Some text pages contain results of television university exercises, answers to quiz questions, or VPS times.
To call up hidden text, press the ≡? button once, to conceal it again, press the ≡? button once more.

5 Double character height

Repeatedly pressing the ≡⇕ button will cause the character height of the upper and lower half pages to be doubled alternately.
When the ≡– button is pressed, the complete page appears with standard character height.

6 Page selection in the television picture

In order to bridge the (sometimes lengthy) waiting times when searching for text pages, you can also perform every page selection while the television picture appears on the screen. To do this, press the ≡X button. ≡X display will appear in the television picture. This indicates that the Projection TV is still in text mode.
If you select a text page, only the page selection display will be shown at the top left of the screen at first. Only after reception of the page will the complete header line appear again.
In order to switch back to the text page, press the ≡ button in each case.

7 Time indication

Press the ⊕ button. Input indication will appear for a few seconds on the screen. Press it again while the input indication is on display to indicate present time in the corner of the screen.
Time indication disappears in several minutes.

NOTES:

- *The current time is only visible when the selected TV program is broadcasting Teletext.*
- *TELETEXT functions do not operate immediately after turning on the power.*
  Several seconds are required for preparation.

TROUBLESHOOTING

Please check the following chart and try the suggested solutions before consulting a PIONEER authorized service center.
Often you can fix the problem by making a simple adjustment on the Projection TV. Faulty connections may be to blame, or it may be another piece of equipment that is causing the trouble.

SYMPTOM	POSSIBLE CAUSE AND SUGGESTED SOLUTION
NO PICTURE	AC power cord is not plugged into the wall socket. **Plug in the AC power cord.** Power switch is off. **Turn on the power switch on the Projection TV, or turn on using the remote control unit.** Selected video signal source is not connected to input jacks, or source unit (VCR, etc.) is not turned on or is not providing a signal. **Check connections and source unit operation.**
COLOR IS WASHED OUT	Color value is too low. **Use PICTURE button and ADJUST buttons to increase ◎ (COLOR) value.** Brightness value is too high. **Use PICTURE button and ADJUST buttons to reduce ☼ (BRIGHT) value.**
COLOR TINT IS WRONG	Tint value is too high or low. **Use PICTURE button and ADJUST buttons to adjust ◐ (TINT) value.**
STATIC IN TV PICTURE	Interference from motor vehicles, neon signs, etc. **Try changing the height or direction of the TV antenna. Move the antenna away from the source of interference.**
GHOSTING ON SCREEN	This "multipath" distortion is caused when the TV signal is received along two paths, directly and after being reflected from tall buildings, mountains or other obstacles. Strong winds may have changed the direction of the TV antenna. **Try changing the height or direction of the antenna. An antenna with better directional characteristics may be required.**
COLORED STRIPES ON SCREEN	Interference from other radio or TV signals. **Try changing the height or direction of the antenna. Try changing to a coaxial antenna cable. Coaxial cable is shielded to minimize pickup of interfering signals.**
COLORED EDGES ON IMAGES	Color convergence needs adjustment. **Tune in a channel, select CONVERGENCE from among the menu items and adjust using the convergence controls on the remote control unit. (See page 27 for details.)**
UNCLEAR PICTURE	Connections are loose or cables are damaged. **Check connections and try using new cables.** Antenna may be damaged. **Check antenna.**
POOR PICTURE OR COLOR QUALITY	Interference from a nearby loudspeaker or other source of magnetism. **Move source of interference away from the Projection TV.**
NO SOUND	Rear panel SPEAKER SELECTOR is set to EXT, but external loudspeakers are not connected. **Set selector to INT.**
NO ON-SCREEN CHANNEL OR OTHER DISPLAY	Strong light striking the remote control sensor may cause the internal microcomputer to malfunction. **Change the position of the Projection TV or change the lighting so that the sensor is not exposed to strong light sources.**

- Abnormal functioning of this Projection TV may be caused by lightning, static electricity, or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.
- With some VCRs, when the VCR is not in play mode, the screen sometimes fluctuates. This is not a malfunction.

CARE OF YOUR PROJECTION TV

DO NOT:

- Do not use strong cleansers, solvents, polishes or chemically treated cloths to clean the screen or cabinet.
- Do not touch or scratch the screen.
- Do not fasten or place rubber or vinyl items on the Projection TV.
- Do not use tape on the Projection TV.
- Do not put any object on the Projection TV.

DO:

- Use a soft cloth to dust the screen and cabinet.
- If necessary, unplug the Projection TV and wipe with a soft cloth moistened with warm water (and mild soap if dirt has built up.) Dry with a soft, dry cloth.
- Treat the screen with care to avoid scratches or damage.
- Ask your local dealer to clean the interior of the Projection TV if maximum picture brightness decreases. This may be caused by dust buildup inside.

TV CHANNEL SELECTION

Table A-1/2

Channel designation	Entry number	Transmission frequency (MHz)	Standard TV system	Remarks
	1			
2	2	48.25	B/G	
3	3	55.25		
4	4	62.25		
5	5	175.25		
6	6	182.25		
7	7	189.25		
8	8	196.25		
9	9	202.25		
10	10	210.25		
11	11	217.25		
12	12	224.25		Italy
A	13	53.75		
B	14	62.25		
C	15	82.25		
D	16	175.25		
E	17	183.25		
F	18	192.25		
G	19	201.25		
H	20	210.25		
21	21	471.25		
22	22	479.25		
23	23	487.25		
24	24	495.25		
25	25	503.25		
26	26	511.25		
27	27	519.25		
28	28	527.25		
29	29	535.25		
30	30	543.25		
31	31	551.25		
32	32	559.25		
33	33	567.25		
34	34	575.25		
35	35	583.25		
36	36	591.25		
37	37	599.25		
38	38	607.25		
39	39	615.25		
40	40	623.25		
41	41	631.25		
42	42	639.25		
43	43	647.25		
44	44	655.25		
45	45	663.25		
46	46	671.25		
47	47	679.25		
48	48	687.25		
49	49	695.25		
50	50	703.25		

Table A-2/2

Channel designation	Entry number	Transmission frequency (MHz)	Standard TV system	Remarks
51	51	711.25	B/G	Italy
52	52	719.25		
53	53	727.25		
54	54	735.25		
55	55	743.25		
56	56	751.25		
57	57	759.25		
58	58	767.25		
59	59	775.25		
60	60	783.25		
61	61	791.25		
62	62	799.25		
63	63	807.25		
64	64	815.25		
65	65	823.25		
66	66	831.25		
67	67	839.25		
68	68	847.25		
69	69	855.25		
70	70	863.25		
71	71	47.25		
X	72	69.25		
Y	73	76.25		
Z	74	83.25		
Z+1	75	90.25		
Z+2	76	97.25		
U1	77	226.25		Belgium
U2	78	234.25		
U3	79	242.25		
U4	80	250.25		
U5	81	258.25		
M1/7	82	104.25		
M2/7	83	111.25		
M3/7	84	118.25		
M4/7	85	125.25		
M5/7	86	132.25		
M6/7	87	139.25		
M7/7	88	146/25		
M8/7	89	153.25		
M9/7	90	160.25		
M10/7	91	167.25		
M1/8	92	110.25		
M2/8	93	118.25		
M3/8	94	126.25		
M4/8	95	134.25		
M5/8	96	142.25		
M6/8	97	150.25		
M7/8	98	158.25		
M8/8	99	166.25		

TV CHANNEL SELECTION

Table B-1/2

Channel designation	Entry number	Transmission frequency (MHz)	Standard TV system	Remarks
S1	1	105.25	B/G	
S2	2	112.25		
S3	3	119.25		
S4	4	126.25		
S5	5	133.25		
S6	6	140.25		
S7	7	147.25		
S8	8	154.25		
S9	9	161.25		
S10	10	168.25		
S11	11	231.25		
S12	12	238.25		
S13	13	245.25		
S14	14	252.25		
S15	15	259.25		
S16	16	266.25		
S17	17	273.25		
S18	18	280.25		
S19	19	287.25		
S20	20	294.25		
S21	21	303.25		
S22	22	311.25		
S23	23	319.25		
S24	24	327.25		
S25	25	335.25		
S26	26	343.25		
S27	27	351.25		
S28	28	359.25		
S29	29	367.25		
S30	30	375.25		
S31	31	383.25		
S32	32	391.25		
S33	33	399.25		
S34	34	407.25		
S35	35	415.25		
S36	36	423.25		
S37	37	431.25		
S38	38	439.25		
S39	39	447.25		
S40	40	455.25		
S41	41	463.25		
S22H	42	315.25		
S24H	43	339.25		
S26H	44	363.25		
S28H	45	387.25		
S30H	46	411.25		
S32H	47	435.25		
S34H	48	459.25		
	49	49.25		Belgium
	50	56.25	↓	

Table B-2/2

Channel designation	Entry number	Transmission frequency (MHz)	Standard TV system	Remarks
	51	63.25	B/G	Belgium
	52	174.25		Belgium
	53	190.25	↓	
	54			
	55			
A	56	45.75	I	IRELAND
B	57	53.75		
C	58	61.75		
D	59	175.25		
E	60	183.25		
F	61	191.25		
G	62	199.25		
H	63	207.25		
J	64	215.25	↓	↓
FA	65	47.75	L'	FRANCE
FB	66	55.75	L'	
FC1	67	60.50	L'	
FC	68	63.75	L'	
F1	69	176.0	L	
F2	70	184.0		
F3	71	192.0		
F4	72	200.0		
F5	73	208.0		
F6	74	216.0		
K4	75	175.25		
K5	76	183.25		
K6	77	191.25		
K7	78	199.25		
K8	79	207.25		
K9	80	215.25		
B	81	116.75		
C	82	128.75		
D	83	140.75		
E	84	152.75		
F	85	164.75		
G	86	176.75		
H	87	188.75		
I	88	200.75		
J	89	212.75		
K	90	224.75		
L	91	236.75		
M	92	248.75		
N	93	260.75		
O	94	272.75		
P	95	284.75		
Q	96	296.75	↓	↓
	97			
	98			
	99			

Table C-1/2

Channel designation	Entry number	Transmission frequency (MHz)	Standard TV system	Remarks
1	1	49.75	D/K	China
2	2	57.75		
3	3	65.75		
4	4	77.25		
5	5	85.25		
6	6	168.75		
7	7	176.25		
8	8	184.25		
9	9	192.25		
10	10	200.25		
11	11	208.25		
12	12	216.25		
13	13	471.25		
14	14	479.25		
15	15	487.25		
16	16	493.25		
17	17	503.25		
18	18	511.25		
19	19	519.25		
20	20	527.25		
21	21	535.25		
22	22	543.25		
23	23	551.25		
24	24	559.25		
25	25	607.25		
26	26	615.25		
27	27	623.25		
28	28	631.25		
29	29	639.25		
30	30	647.25		
31	31	655.25		
32	32	663.25		
33	33	671.25		
34	34	679.25		
35	35	687.25		
36	36	695.25		
37	37	703.25		
38	38	711.25		
39	39	719.25		
40	40	727.25		
41	41	735.25		
42	42	743.25		
43	43	751.25		
44	44	759.25		
45	45	767.25		
46	46	775.25		
47	47	783.25		
48	48	791.25		
49	49	799.25		
50	50	807.25	↓	↓

Table C-2/2

Channel designation	Entry number	Transmission frequency (MHz)	Standard TV system	Remarks
51	51	815.25	D/K	China
52	52	823.25		
53	53	831.25		
54	54	839.25		
55	55	847.25		
56	56	855.25		
57	57	863.25		↓
R2	58	59.25		OIRT
R5	59	93.25		
R6	60	175.25		
R7	61	183.25		
R8	62	191.25		
R9	63	199.25		
R10	64	207.25		
R11	65	215.25		
R12	66	223.25	↓	
	67			
	68			
	69			↓
0	70	46.25	B/G	Australia
1	71	57.25		
2	72	64.25		
3	73	86.25		
4	74	95.25		
5	75	102.25		
5A	76	138.25		
6	77	175.25		
7	78	182.25		
8	79	189.25		
9	80	196.25		
10	81	209.25		
11	82	216.25		↓
1	83	45.25		New Zealand
2	84	55.25		
3	85	62.25		
8	86	203.25		
9	87	210.25		
10	88	217.25		
11	89	224.25	↓	↓
	90			
	91			
	92			
	93			
	94			
	95			
	96			
	97			
	98			
	99			

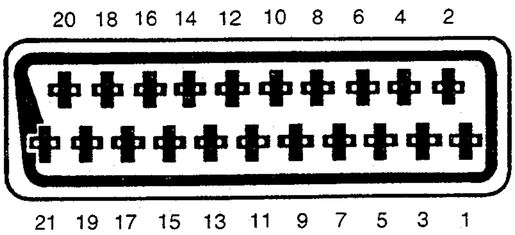
SPECIFICATIONS

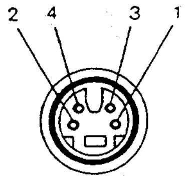
DISPLAY SECTION

Reception system	PAL, SECAM, NTSC, NTSC 4.43
Screen size	50"
CRT	7" CRT x3
Actual viewing angle	Horizontal H = 140° Vertical V = 50°
Input terminals	2 Scarts, 2 AV Cinch, 2 Y/C plug
Output terminals	Video output, audio output (Recording)
Input signal	Video signal: 1.0 Vp-p ±3 dB TV coaxial 75 ohms UNBAL
Input impedance	Video input: 75 ohms ±10% Audio input: 10 kohms or more
Input signal polarity	Synchronized negative
Output terminal signal ratings:	
Output terminals	Video signal: 1 Vp-p (75 ohms load) Audio signal: 500 mV rms (100% modulation)
Output impedance	Video output: 75 ohms ± 10% Audio output: Less than 1 kohms

TUNER SECTION

Circuit type	Video signal detection: LLD detection PLL Digital Synthesizer system Audio multiplex: CCIR system NICAM, MTS
Reception channels	VHF; CH2 – CH12, UHF; CH21 – CH69 CATV; CH E2 - CH S20, Italy; CH A - CH H2 New Zealand; CH1 - CH11 OIRT; R1 - R12 China; CH1 - CH57 Australia; CH0 - CH11 New France; FB - F6 US; CH2 - CH69 US CATV STD; CH2 - W+29 US CATV; HRC CH1 - A-1
Antenna terminal	ANTENNA terminal, TV coaxial 75 ohms UNBAL





AMPLIFIER SECTION

Tone control	BASS, TREBLE
Built-in speaker system	16 cm (6-1/2 in) mid-low range x2 6 cm (2-3/8 in) high range x2
External speaker impedance	8 -16 ohms

ELECTRICAL SECTION, MISCELLANEOUS

Power requirements	AC110V/120-127V/220V/240V (switchable). 50/60 Hz
Power consumption	300 W
External dimensions	1145 (W) × 675 (D) × 1326 (H) mm
Weight of main unit	110 kg

WIRELESS REMOTE CONTROL UNIT

Operation System: Infrared remote control system

Power source: Two IEC R6 (UM-3, "AA") 1.5 V dry cell batteries

ACCESSORIES

Operating instructions	1
Remote control unit	1
IEC R6 (UM-3, "AA" size) dry cell batteries	2
Caution card	1
Warranty card	1
Circuit diagram	4
Power Cord	2

NOTE:

Specifications and design subject to possible modifications without notice due to improvements.

Assignment of connections for EURO-AV sockets

EURO-AV1	**EURO-AV2**
1 Audio output B	1 Audio output B
2 Audio input B	2 Audio input B
3 Audio output A	3 Audio output A
4 Audio ground	4 Audio ground
5 Blue ground	5 —
6 Audio input A	6 Audio input A
7 Blue	7 —
8 Switching voltage	8 —
9 Green ground	9 —
10 —	10 —
11 Green	11 —
12 —	12 —
13 Red ground	13 —
14 —	14 —
15 Red or chroma signal with S-Video	15 Chroma signal with S-Video
16 Blanking signal	16 —
17 Video output ground	17 Video output ground
18 Video input ground	18 Video input ground
19 Video output	19 Video output
20 Video input or luminance with S-Video	20 Video input or luminance with S-Video
21 Screening or ground	21 Screening or ground

Assignment of connections for S-VIDEO socket

1 Ground
2 Ground
3 Luminance
4 Chroma signal

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